



Flash Update Utility

User's Guide

SSR-LC • SSR-1 • SSR-1U • SSR-SDU

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TL;DR

The Slerj Flash Update utility detects the connected logger, identifies its model and hardware revision, and offers only firmware versions that fit it. The rest of this document covers the details. The whole process is:

1. Connect the logger — **leave it unpowered** — to a serial port, and select that COM port.
2. Click **Capture Device**, *then* apply power to the logger to complete the capture.
3. Select the firmware version. The newest is already selected.
4. Click **Program**. This erases, programs and verifies.
5. Cycle power on the logger to start the new firmware.

If the utility reports that the firmware does not match the device, nothing has been written — contact slerrj@slerrj.com.

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1 Introduction

1.1 What this utility does

The Slerj Flash Update utility (SlerjFlashUpdate.exe) installs firmware on SSR-series serial data loggers. It replaces the separate, device-specific flash utilities supplied with earlier products.

Unlike those utilities, this one identifies the connected logger for you. When it captures a device it reads the model and hardware revision directly from the unit, then offers only the firmware images that belong to that hardware. There is no product to choose and no file path to edit.

Because the utility knows what it is connected to, it can also refuse firmware that does not belong on that device. That check is described in section 7.

1.2 Supported products

This download supports the SSR-LC, SSR-1, SSR-1U and SSR-SDU. The SSR-1 is available in two hardware revisions, and the utility distinguishes between them automatically. Section 10.1 lists the identifiers you will see on screen.

If you connect a logger whose firmware is not included in this download, the utility will identify the unit and tell you so. Contact Slerj for the correct package.

2 Before You Begin

2.1 What is in the download

The download is a ZIP archive containing the utility, the firmware it installs, and this guide:

- **SlerjFlashUpdate.exe** — the utility itself.
- **firmware** — firmware images and release notes, in a folder per product.
- **flashloader** — support files the utility loads onto the logger.
- **SlerjFlashUpdate_UserGuide.pdf** — this document.

Extract the ZIP before running the utility. SlerjFlashUpdate.exe needs the folders that came with it. Windows will let you start the program directly from inside a compressed folder, but it then runs on its own in a temporary location and will report that no firmware was found. Extract the whole archive to a folder on your PC first, and keep the files together.

2.2 What you need

- A Windows PC.

- A serial connection between the PC and any channel of the logger — directly, or through a USB-to-serial adapter with its drivers already installed.
- The ability to switch power to the logger on and off.

Nothing is installed, no administrator rights are required, and nothing is written outside the folder you extracted.

2.3 Starting the utility

Run SlerjFlashUpdate.exe. Windows may show a security prompt because the program is downloaded and not commonly encountered; allow it to run.

The utility opens with no device connected. The version is shown in the title bar and as the first line of the message log at the bottom of the window — quote it if you contact support.

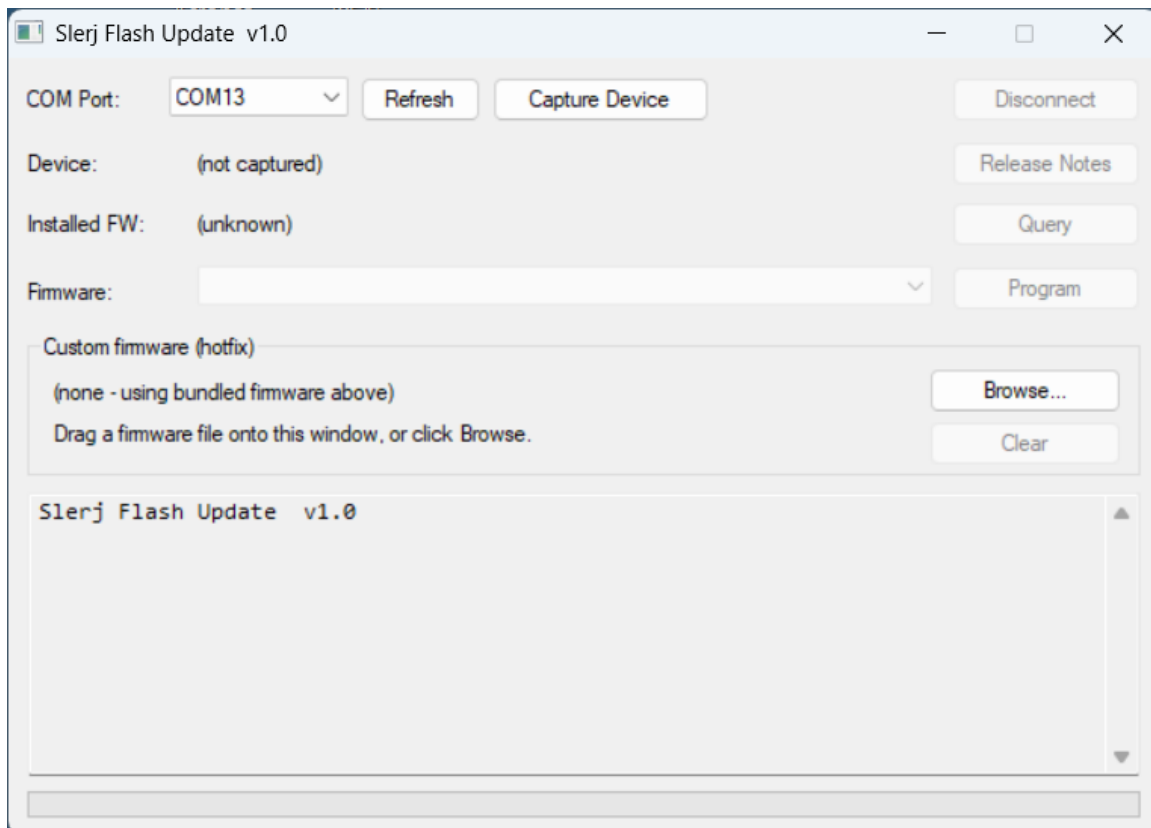


Figure 1 — The utility at startup, before a device is captured.

3 Check the Release Notes

Before installing a new version, read its release notes. Click Release Notes after capturing a device to open the full change history for that product. The window can stay open while you work, so you can compare versions before choosing one.

Some firmware versions reset stored settings. A few releases invalidate the configuration saved in the logger and return it to factory defaults. This is always stated in the release notes for the version concerned. If the notes for the version you are installing mention it, record your current settings from the shell before programming, and restore them afterwards. See your product manual for the relevant shell commands.

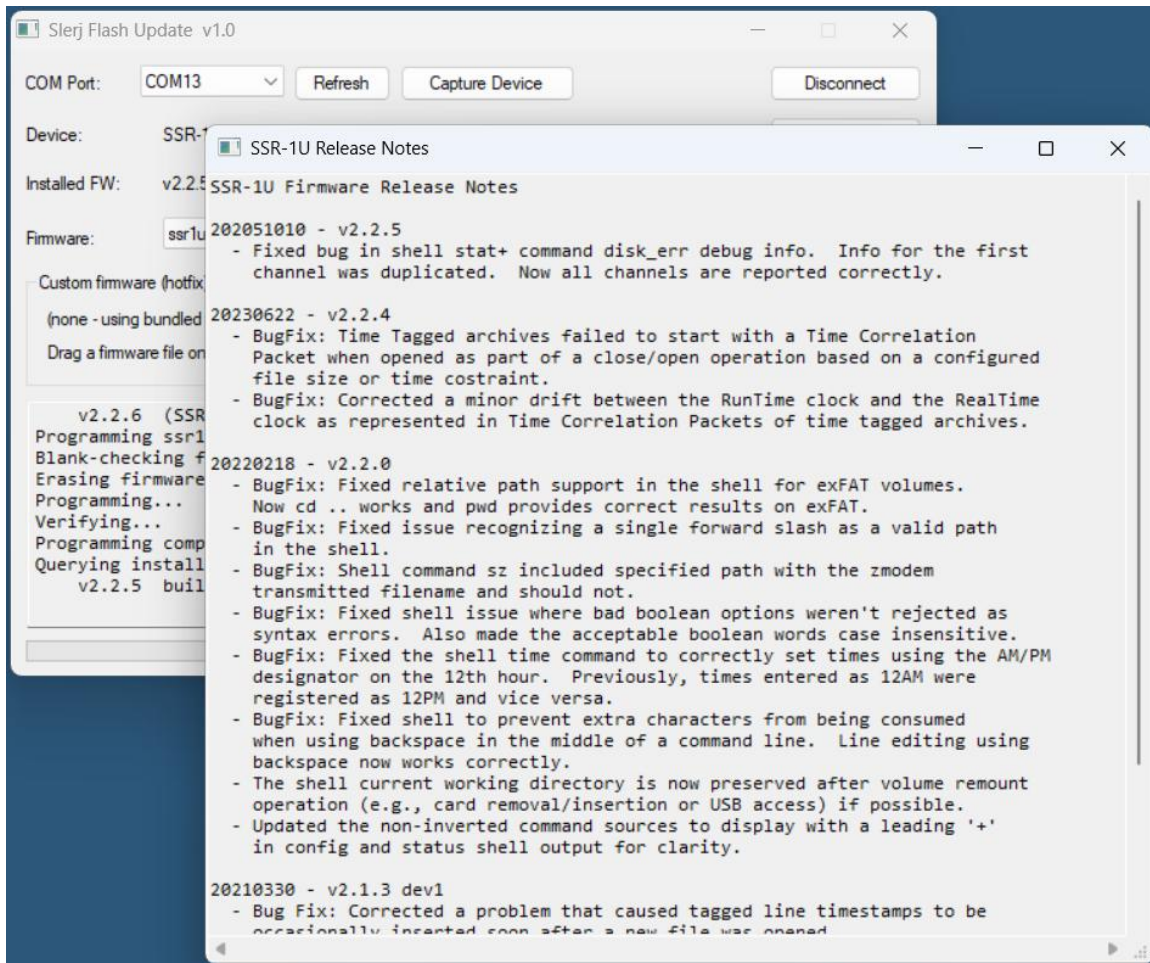


Figure 2 — Release notes for the captured product.

4 Connecting and Capturing the Device

Capturing is how the utility takes control of the logger. It works by listening for the announcement the logger sends when it powers up, so the order of the following steps matters.

1. Connect any channel of the logger to a serial port on the PC. Leave the logger **unpowered**.
2. Select the COM port from the list. If the port is missing — for example because you plugged in a USB adapter after starting the utility — click **Refresh**.

3. Click **Capture Device**. The utility reports that it is waiting for the target.
4. Apply power to the logger.

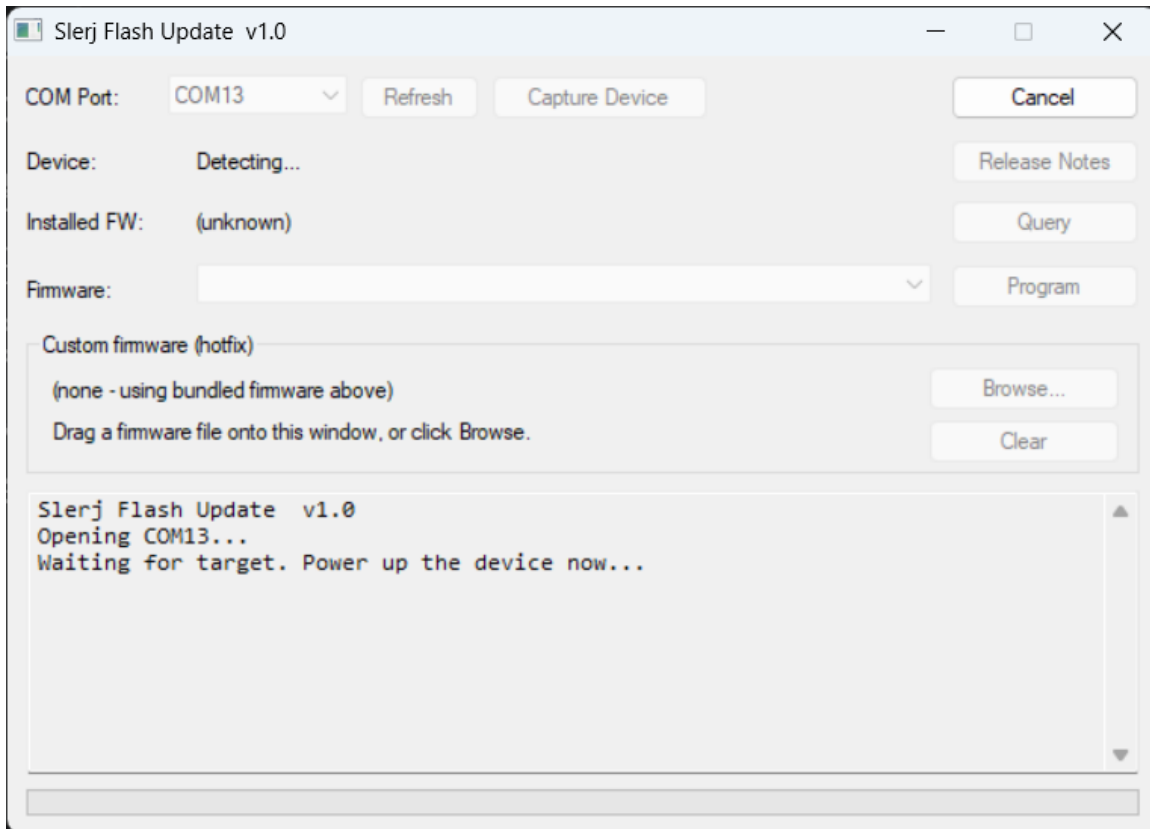


Figure 3 — Waiting for the logger to be powered up.

If the logger is already running when you click Capture Device, nothing will happen — it has already sent its announcement and will not send another until it is restarted. Remove power, wait a moment, and apply it again.

While the utility is waiting, the **Disconnect** button becomes **Cancel**. Use it to stop waiting if you chose the wrong port or the logger will not power up.

A successful capture fills in the Device field, reads the firmware currently installed, and lists the firmware versions available for that hardware.

5 Reading the Screen

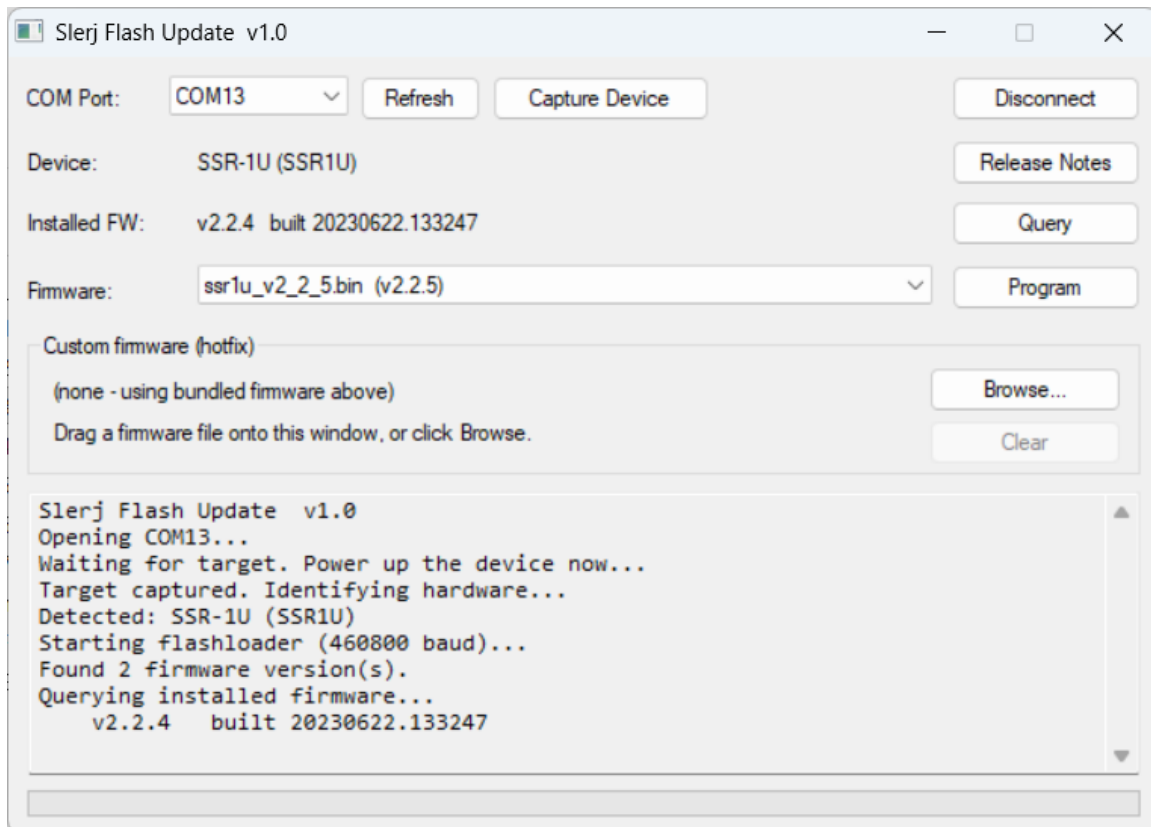


Figure 4 — After a successful capture.

Device — the model and hardware revision, read from the logger itself. It is not something you select. The hardware revision appears in parentheses after the model, for example SSR-1U (SSR1U). Some products exist in more than one hardware revision, which is why both are shown.

Installed FW — the firmware currently on the logger: its version and, where the image records them, the product it was built for and the date it was built. Older firmware records less of this, so a shorter entry here is normal and is not a fault. Click **Query** to read it again at any time.

Firmware — the versions included in this download for the captured device. The newest is selected for you. Older versions are offered deliberately, in case you need to match a configuration that has already been tested.

Release Notes — the change history for this product. See section 3.

Custom firmware — for installing a firmware image that is not part of this download. See section 7.1.

The message log — a record of everything the utility has done, beginning with the utility version. If you need to contact support, copy the contents of this box into your message.

During long operations a progress bar runs along the bottom of the window, and the title bar shows what is happening and how far along it is.

6 Updating the Firmware

With a device captured and a firmware version selected, click Program. The utility works through four stages, which you can follow in the message log:

- **Blank check** — determines whether the firmware area is already erased.
- **Erase** — clears the firmware area if needed.
- **Program** — writes the new firmware.
- **Verify** — reads the firmware back from the logger and confirms it matches the image.

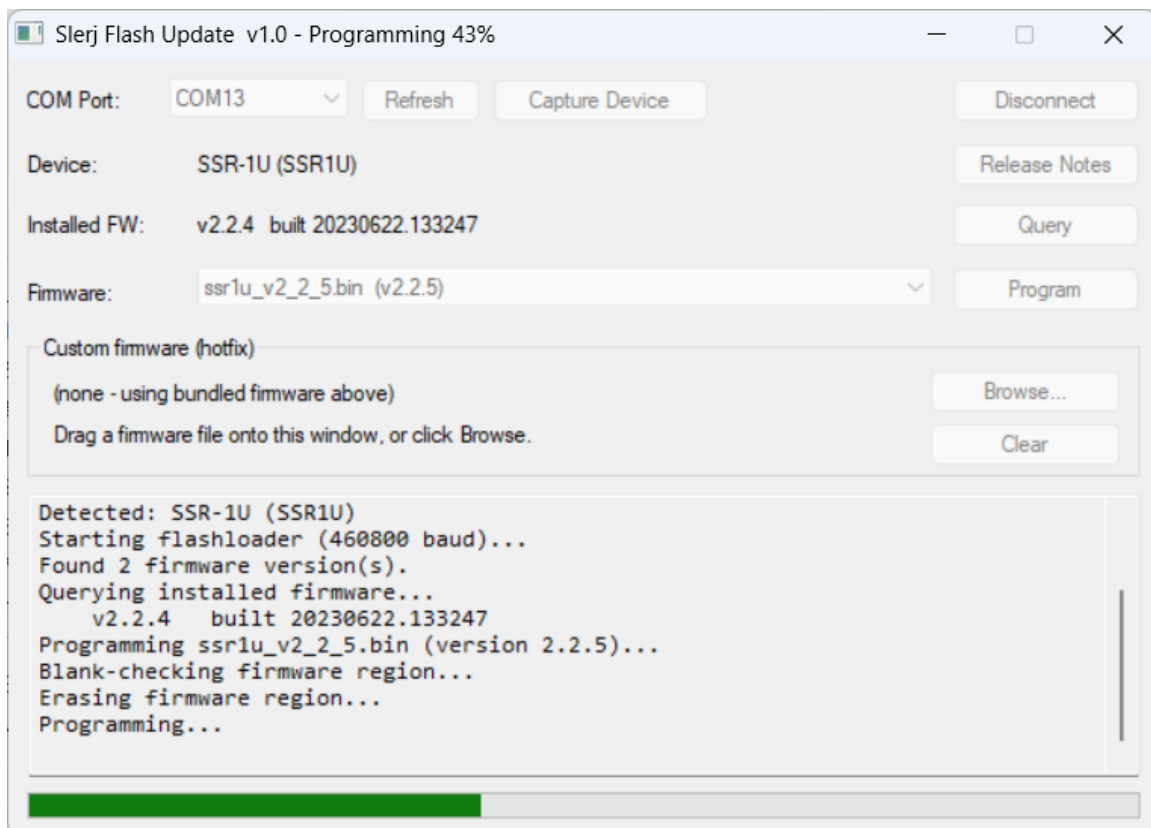


Figure 5 — Programming in progress.

When programming finishes, the utility automatically re-reads the firmware from the logger, so you can confirm the new version is installed before doing anything else.

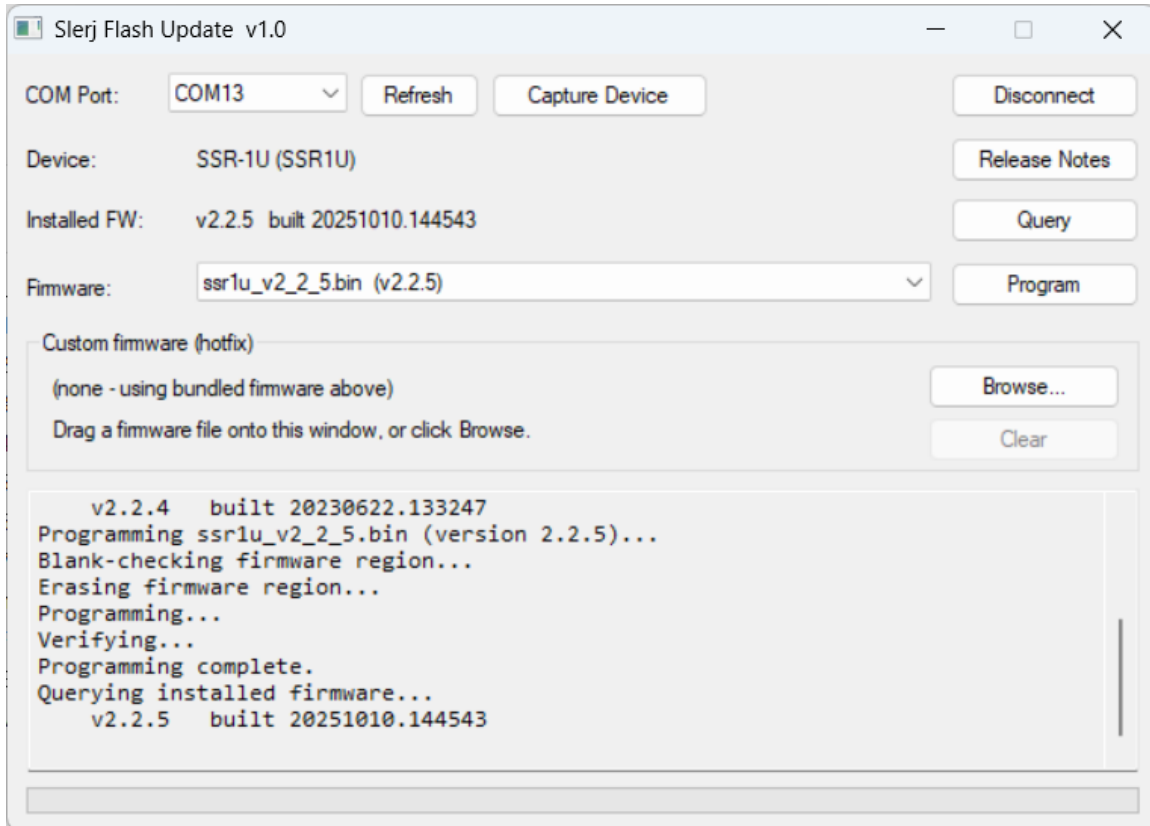


Figure 6 — A completed update, with the new version confirmed.

Cycle power on the logger to start the new firmware.

If power is interrupted during an update. Simply reconnect, capture the device and program it again. An interrupted update leaves the logger without working application firmware, but it does not damage the unit or prevent it from being reprogrammed.

6.1 What the indicator LEDs show

While the utility is connected, the logger's LEDs are driven by the flashloader rather than by normal firmware, so they behave differently from usual. The indications appear on the channel you connected to, not on all channels.

- **Green, two short flashes every two seconds** — connected and idle, waiting for a command. This is the normal state between operations.
- **Green, rapid irregular flicker** — data is being transferred. This replaces the double flash while the utility is talking to the logger.
- **Red, on** — the logger is erasing or writing. The red LED may stay on continuously for the whole of an erase or programming pass. This is expected and does not indicate a fault.

7 How the Utility Matches Firmware to Your Device

Earlier Slerj flash utilities were supplied per product, so a firmware image never needed to say what it was for — the utility itself was the answer. This is a single utility covering several products, so every current firmware image records the model and hardware revision it belongs to, and the utility checks that record against the device it captured.

This is why the Firmware list only ever shows versions appropriate to the logger you connected.

If a firmware image does not match the device, the utility says so and refuses to program it. There is no override. Nothing has been written to the logger. This normally means the file was intended for different hardware; contact Slerj for the correct image.

You cannot damage the logger by installing the wrong firmware. The utility only replaces the application firmware. The bootloader that allows a logger to be captured and reprogrammed is held separately and is never erased or altered. A logger can always be reconnected and programmed again, even after an update that failed or was interrupted.

You may occasionally see a message saying that a firmware image cannot be verified. This applies to images produced before firmware recorded its own target hardware, which in practice means a file kept from an earlier release. Such an image is not damaged and is not unofficial; the utility simply has no way to confirm it belongs on the connected device, so the decision is left to you.

7.1 Using firmware that is not part of this download

The Custom firmware panel accepts a firmware image supplied separately by Slerj — for example a version released after this download was published. Drag the file onto the utility window, or click Browse to select it. It does not need to be placed in any particular folder.

While a custom image is loaded, the Firmware list is disabled: the utility installs either a bundled version or the custom image, never a mixture of the two. Click Clear to return to the bundled list.

The panel shows the file that is loaded and the hardware it is intended for, so you can confirm it before programming. If it does not match the captured device, the utility says so and Program stays unavailable until you clear it.

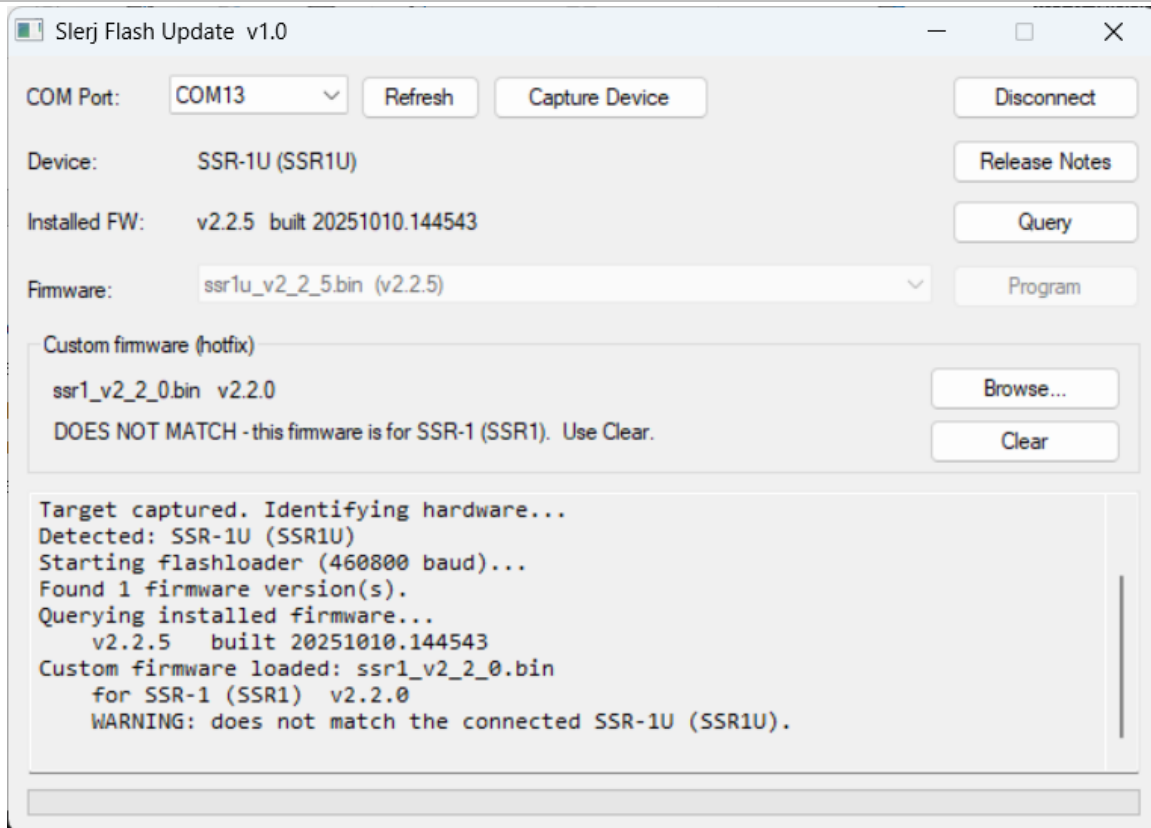


Figure 7 — A custom firmware image that does not match the connected logger.

A custom image must record the hardware it belongs to, or the utility will not load it. An older image kept from a previous release will not carry that information. To use such a file, place it in the folder under firmware\ that corresponds to your hardware — the folders are named with the same hardware identifier shown in the Device field — where it will be offered alongside the bundled versions, or contact Slerj for a current image.

8 Updating Several Loggers

The utility keeps the serial port open after programming so it can read the firmware back. A terminal program cannot use the port until the utility releases it.

1. Update the logger as described in section 6.
2. Click **Disconnect** to release the COM port.
3. Open your terminal program, then cycle power on the logger. Disconnect does not restart the logger, so opening the terminal first lets you watch it start up.
4. Return to the utility and click **Capture Device** for the next unit.

A custom firmware image stays loaded while you work through several loggers, and is re-checked against each one you capture.

9 Troubleshooting

If you see	What to do
No COM ports in the list	The serial port or USB adapter is not installed, or was connected after the utility started. Click Refresh. If the port still does not appear, check the adapter drivers in Windows Device Manager.
Could not open COMx. Is another program using it?	A terminal program or another application is holding the port. Close it and try again.
Waiting for target, and nothing happens	The logger was already powered when you started the capture: remove power, wait a moment and re-apply it. Otherwise check that the correct COM port is selected and that the cable is connected to a channel of the logger. Also verify that the serial connection standard matches the logger port (RS-232 vs TTL/CMOS).
Unrecognized HW identifier	The logger is newer than this download. Download the current utility from www.slerj.com .
This download does not include firmware for ...	The logger was identified correctly, but its firmware is not distributed in this package. Contact Slerj.
No firmware images found	The ZIP was not fully extracted, or the firmware folder has been moved away from the program. See section 2.1.
A firmware file was refused when dragged onto the window	The image does not record the hardware it belongs to. See section 7.1.
Verification failed after programming	Contact Slerj and include a copy of the message log.
Programming failed or was interrupted	The logger is recoverable. Reconnect, capture the device and program it again.

When reporting a problem, copy the contents of the message log into your message. It records the utility version, the device that was detected and every step that was attempted.

10 Reference

10.1 Product and hardware identifiers

The Device field shows the product model followed by its hardware revision in parentheses. Use this table to confirm the utility has identified your logger correctly.

Product	Hardware identifier
SSR-LC	SSRLC
SSR-1	SSR1 or SSR1L
SSR-1U	SSR1U
SSR-SDU	SSRSDU

The SSR-1 has been produced in two hardware revisions. They require different firmware, and the utility selects the correct one automatically.

10.2 Terms

Bootloader — a small permanent program in the logger that runs at power-up. It announces the logger to this utility and allows firmware to be replaced. It is never altered by an update.

Flashloader — a temporary program the utility loads into the logger's memory to carry out erasing and programming. It is not retained.

Capture — taking control of the logger at power-up, before it starts its normal firmware.

Firmware image — a file containing a firmware version, together with a record of the version and the hardware it belongs to.

Hardware revision — a variant of a product that requires its own firmware.

10.3 Support

Email slerj@slerj.com · Web www.slerj.com

Please include the utility version, the product and hardware identifier shown in the Device field, the firmware version you are installing, and a copy of the message log.