

Upgrading the CP23xx-RGBe/C laser software

This document provides upgrade instructions for projectors when the laser subsystem firmware (P/N: 001-115008-XX) is older than version 2.9.

This document does not apply for projectors produced later than May 2022. Refer to the upgrade procedure in the projector model's Service guide.

Affected products

The following products are affected:

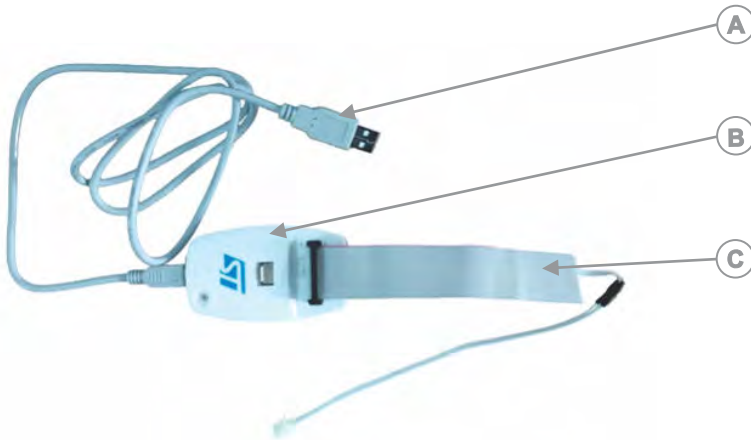
- CP23xx-RGBe
- CP23xx-RGB/C

Required components

The following components are required.

Required components

- Windows laptop computer
- Laser subsystem firmware (P/N: 001-115008-XX)
- Light Source Software Upgrade kit (P/N: 003-007102-XX), which contains the following components:
 - T interface convert USB interface (A)
 - ST-LINK/V2 debugger—SWD interface (B)
 - 20 pin 2.54 flat cable convert XH2.54-3P terminal (C)
 - SD card



Before upgrading the laser subsystem firmware

Before starting the CP23xx-RGBe and CP23xx-RGB/C laser subsystem firmware upgrade to version 2.9 or newer, verify the following:

- The projector model is a CP23xx-RGBe or CP23xx-RGB/C.
Check the About page to verify the model.
- No errors or alarms exist on the projector or laser.
- The current version of the laser subsystem firmware (available in the **Laser Diagnostic** menu).

If it is version 2.9 or newer, use the standard Christie upgrade procedure instead of the procedure outlined in this document.

Updating the laser driver board

Follow these steps to install the ST-LINK Utility firmware.

1. Download the ST-Link Utility version 4.6.0 firmware from the ST website:
<https://www.st.com/en/development-tools/stsw-link004.html>
2. To start the installation, double-click `STM32 ST-LINK Utility v4.6.0 setup.exe`.
3. At the Welcome page of the Installation wizard, select **Next**.
4. To agree to the license agreement, select **Yes**.
5. To continue the installation, select **Next**.
6. If prompted to install the driver during the installation process, select **Install**.
7. When the installation completes, select **Finish**.
8. Plug the ST-Link device into the USB port of your computer and verify the device is selected in the Device Manager.

Upgrading the driver software

Follow these steps to upgrade the driver software.



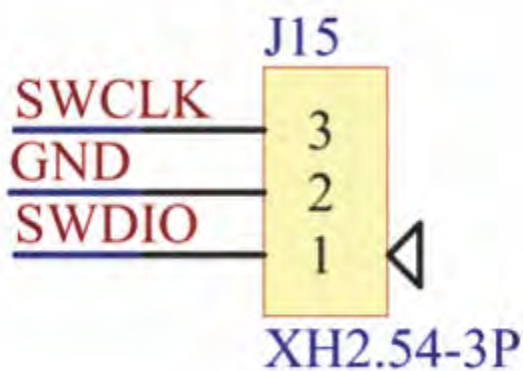
Caution! If not avoided, the following could result in minor or moderate injury.

- Observe all electrostatic precautions. Use a grounded wrist strap and insulated tools when handling, servicing, or cleaning electronic assemblies.

1. Open the STM32 ST-LINK Utility software.
2. Make sure the projector is disconnected from AC power.
3. Connect the XH2.54-3P cable to the laser driver board.
 - a) Loosen the seven screws securing the top cover of the projector and remove it.
 - b) Locate the laser driver board in the projector.

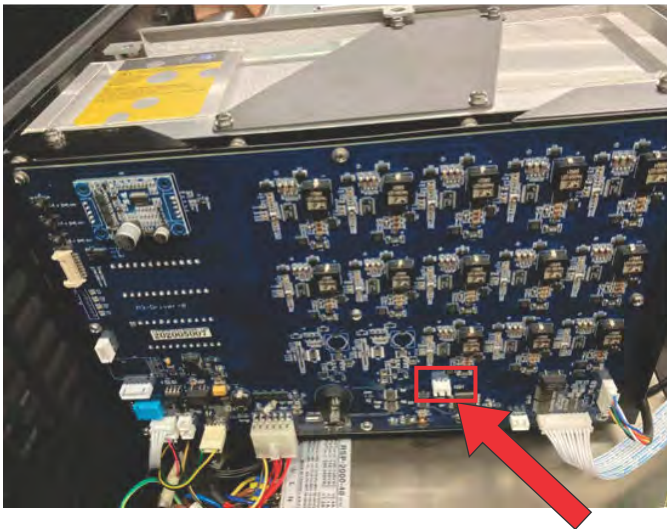


- c) Connect the XH2.54-3P cable to the J15 interface of the laser driver board. Other wiring harnesses can also be used.



4. Connect the projector to AC power.
5. Power on the projector to Standby mode.
6. Copy the JM binary file to a location on the laptop.

7. Select the **Target** menu.
8. Select the binary file to drive the latest software program.
For example, select jmST_IAP_v100.hex.
9. To verify, select **OK**.
10. In the Download dialog make sure **Verify while programming** and **Reset after programming** are selected.
11. To start the upgrade, select **Start**.
After approximately 10 seconds a Verification...OK message appears.
12. Update the laser driver board with the jmST_IAP_v100.hex firmware.
The two green indicator lights on the laser driver board (location shown below) flash together after upgrading. If they are not flashing, push the **Reset** button on the circuit board.



Troubleshooting: Cannot download the firmware

If the firmware cannot be downloaded and you are prompted to turn off the Read protection function, complete the following steps:

Cannot download the firmware

1. From the STM32 ST-Link Utility, select **ST-LINK > Option Bytes**.
2. Change the Read Out Protection option to **Disabled**.
3. Select **Apply**.

Upgrading the laser touch panel user interface from the SD card

Follow these steps to upgrade the laser touch panel user interface from the SD card.

1. Remove the four screws securing the top cover of the laser touch panel and remove it.

2. Insert the SD card into the user interface panel.



3. Connect the laser touch panel user interface to the projector.
4. Power on the projector.
The screen is blue and each user interface is updated in sequence. It takes approximately 20 seconds before the upgrade completes.
5. Remove the SD card and re-install the top cover of the laser touch panel.

Upgrading the Christie projector software

Follow these steps to upgrade the Christie projector software.

The projector software upgrade must be run twice to make sure the laser firmware is upgraded properly. The first upgrade updates the software to a version that can support the laser board firmware upgrade and the second upgrade updates the laser board firmware as part of projector software upgrade.

1. Plug the USB drive with the software upgrade into the projector.
2. Log into the projector user interface.
The minimum login access for the software upgrade is *installer*.
3. Christie recommends upgrading only what needs to be upgraded.
The projector automatically reboots when the upgrade completes.
4. Log into the Christie touch panel user interface to repeat the upgrade.
During this upgrade, the projector updates the laser driver board firmware. During the upgrade, for the CP23xx-RGBe units, you can hear the noise of the fan near the rear cover during the upgrade and for the CP23xx-RGB/C projectors, you can see the indicator light on the circuit board flashing quickly.
The projector automatically reboots when the upgrade completes and the upgrade finishes after the reboot.

Technical support

Technical support for Christie Cinema products is available at:

- *Support.cinema@christiedigital.com*
- +1-877-334-4267
- Christie Professional Services: +1-800-550-3061 or *NOC@christiedigital.com*