

Firmware Update Manual

Using the Switch to Load Bootloader and Firmware for CPU200/250

(The CPU200 and CPU250 both use the same process and the same files)

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WARNING:

Firmware updates should only be performed when the equipment being controlled by the OCS is in a safe, non-operational state. Communication or hardware failures during the firmware update process can cause the controller to behave erratically resulting in injury or equipment damage. Confirm that the functions of the equipment work correctly following a firmware update before returning the OCS to operational mode.

Warning: Updating firmware clears the application program, screens, configurations, and register data. It is recommended that, before updating firmware, a backup of the program and register data be created. See MAN1507, the CPU200/250 User Manual, for instructions on creating backups. ([Document Search](#))

Procedure Requirements

- Cscape 10.1.554 or newer is required for this procedure.
- Firmware 15.40 or higher is required to update firmware using a microSD card.

Downloading the Updated Firmware Files

Note: Before downloading, verify if CsCAN or CANopen communications are required.

1. Download new firmware from the Horner APG website.
2. Firmware files from the Horner website download as a .ZIP file. These zipped files must be extracted.

United States	https://hornerautomation.com On the website, go to Support > Controller Firmware and download the new firmware.
Europe	http://www.hornerautomation.eu On the website, go to Support > Firmware and download the new firmware. Note: An account is required to access firmware from this site. Select Login/Register to create an account, as needed.

Available Methods for Updating Firmware

There are two firmware delivery methods:

- [Cscape over USB/serial](#)
- [MicroSD card](#)

Updating With Cscape Over USB/Serial

Replacing the Firmware Files

Note: Former firmware downloads did not include a .dfu file. Current downloads include a .dfu file, and it is now required. Ensure it is copied and pasted from the downloaded zip file to the Cscape folder.

1. Download the firmware files from the Intranet or the Horner beta portal.
2. Open the Cscape file location. For example, "C:\Program Files (x86)\Cscape 10.0"
3. Open the Firmware folder.
4. Locate the new CPU250_b.s19, CPU250_b.dfu, and CPU250.s19 files from the extracted zip file in the Firmware folder.
5. Delete the old CPU250_b.s19, CPU250_b.dfu, and CPU250.s19 files from the Cscape file location.
6. Replace the CPU250_b.s19, CPU250_b.dfu, and CPU250.s19 files with the new files in the Cscape file location with the new files from the unzipped Firmware folder.

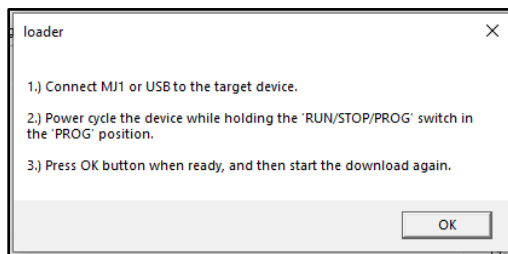
Start Here if a Bootloader Update is Required

If the bootloader needs to be updated, start here:

1. Load the Bootloader from Cscape:
 - a. Connect the device to Cscape
 - b. Open the Firmware Update Wizard
 - c. From the **Product Type** dropdown menu, select **OCSIO Base RCC**
 - d. Confirm **Boot/CPLD** is selected, as shown

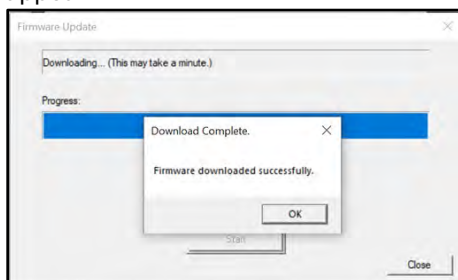


- e. Select **OK**. The Loader pop-up box will open



2. Power off the device
3. Move the switch to the **LOAD** position.
4. While continuing to hold the switch in the LOAD position, power on the device.
5. Keep holding the switch in the LOAD position, and after approximately 10 (ten) seconds, on the screen, select **OK** and then select **Start**.

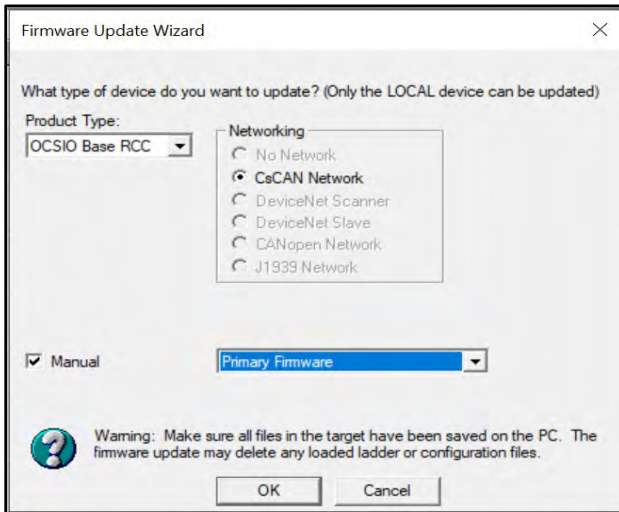
The Bootloader will load. When successful, the **Firmware downloaded successfully** message will appear.



6. On the **Download Complete** box, select **OK**. The Firmware Update Wizard will close.
 7. Continue to the next procedure.

Start Here if Firmware Files Only are Required

1. Reopen the Firmware Update Wizard.



- a. Confirm the **Product Type** is still **OCSIO Base RCC**
 - b. Confirm that **Primary Firmware** has been selected, as shown
 - c. Select **OK**
2. In the following pop-up box, select **Start**. The firmware will begin to download.
 3. Wait for the download to finish and select **OK** to complete the firmware update.

Updating with a microSD Card

Preventing Program Loss

The Backup/Restore function is strongly recommended. An option for preventing the loss of an application due to a drained battery is to use the Backup/Restore function (this is part of the fail-safe system).

The Backup/Restore function is accessible from the downloader ladder logic and does not require a microSD card. For more information, see the Fail-Safe System chapter in the CPU200/250 User Manual (MAN1507) available on the [Horner APG website](#)

Placing the .s19 file at the root of the microSD card

1. Place the .s19 file in the root of the microSD card.
2. Insert the microSD card into the controller.

Methods for Updating from a microSD card

[Switch-based Update Method](#)

[System Register-based Update Method](#)

Switch-based Update Method

1. Hold the switch in the LOAD position for 3 seconds, then release the switch. If the firmware file is present on the microSD card the device will start loading the firmware file.
 - The Run and OK LEDs will blink while the firmware is updated.
 - The LED pattern that indicates that a firmware upgrade is underway is made up of the RUN and OK LEDs blinking alternatively at 1Hz frequency until the firmware update is complete. Afterwards, the device resets, and the new firmware will start executing.

System Register-based Update Method

Note: The user should monitor %SRs for updates. There is no busy symbol indication for this method.

1. Place the .s19 file in the root of microSD card.
2. Insert the microSD card into the controller.
3. Set %SR154.9 to high and the %SR154.16 bit will reset to high.
The controller will update the firmware placed in the root directory of microSD card .
4. After the firmware update process is successful, %SR154.9 and %SR154.16 bits are reset (low).