

SX5 Firmware Update Process

In a cascaded system, all SX5 scanners must have the same internal firmware. If they do not have the same internal firmware, units with older firmware could show one of two errors:

- INTF15 error code; or
- ALIGN SW REQ

The new configuration software and firmware revision 3.2.0 make updating the units to 3.2.0 straightforward. Any SX5-B6, SX5-M10, SX5-M70, SX5-ME70, or SX5-R with an internal firmware version of 3.1.xxx can now be updated to 3.2.0 with the same firmware update package.

This update does NOT apply to the SX5-B units.

There are four possible scenarios for updating the internal firmware:

1. Updating a single unit (SX5-B6 or Master by itself)
2. Updating within a cascaded system: Replacing a Master scanner
3. Updating within a cascaded system: Replacing a Master scanner but keeping existing Removable Memory device
4. Updating within a cascaded system: Replacing a Remote scanner

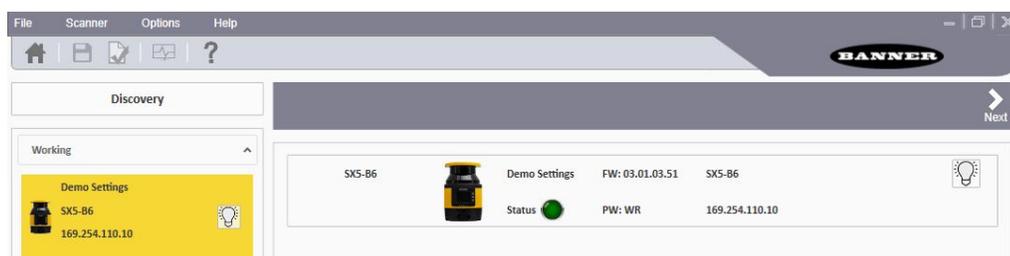
To prepare for the update process:

1. Download the latest SX Safety Laser Scanner Software (v3.2.0 or higher) from the **Downloads > Software** section of [SX5 Series Safety Scanners \(bannerengineering.com\)](https://www.bannerengineering.com).
2. Download the firmware update package: SX Firmware Version 3.2.0.
3. Unzip the firmware update file. The firmware update file must be unzipped before the software can use it to update a scanner. The firmware update document must upload to the scanner as a package file.

Update a Single Unit

Follow these steps to update the firmware of a master scanner (SX5-Mxx) or standalone scanner (SX5-B6).

1. Apply power to the scanner and connect it to the PC with the SX Safety Laser Scanner Software. Banner recommends making a point-to-point connection and avoiding hubs or switches.
2. Open the 3.2 or higher SX Safety Laser Scanner Software.
3. From the menu bar, go to **Scanner > Discovery**.
4. Select the desired scanner from the list in the column on the left of the window. If needed, align the scanner to the computer's network (or align the computer to the scanner's network).
5. Check the scanner's current firmware version (FW: xx.xx.xx.xx).



- For firmware version 02.xx.xx.xx: The device cannot be updated.
 - For firmware version 03.01.xx.xx: Proceed with the update.
6. In the menu bar, go to **Scanner > Update Firmware**.
 7. Enter the device password (the default password is `admin`). The software takes you to the **Firmware Update** screen.
 8. Click **Select**, browse to the file location of the update package (`sls_STM32F373VC-3.2.0.866_all_components.package`), and select the package.
 9. Click **Load** in the new **Configuration Upload** pop-up window.
 10. When the warning: **Scanner status change to Off-Duty** displays, select **OK**. The load process can take several minutes to complete.
 11. After the firmware is loaded, click **Accept** in the **Validation** window to finish the update process. Before selecting **Accept**, you can validate that your safety fields have not changed per the process in the SX5 Manual.
 12. When the process is complete, **Firmware Update Process complete** displays. Select **OK**.

The software returns to the home screen.

Replace and Update a Master Scanner in a Cascaded System

Follow these steps to replace a master scanner in a cascaded (master and remote) system.

1. Save the existing configuration file (or verify it is saved) on your computer before uninstalling the old master unit.
2. Connect the new master with firmware version 3.2.0 in place of the old master (to the remotes).
3. Apply power to the scanners and connect the master to the PC with the SX Safety Laser Scanner Software (v3.2 or newer).
Banner recommends making a point-to-point connection and avoiding hubs or switches.
The new master scanner's display shows **WAITING CONF**.
4. On the master scanner, press one of the two arrow keys next to the display and verify that **ALIGN SW REQ** (firmware alignment required) displays.
This condition should also be displayed on the **Diagnostics** screen of the configuration software.
5. Open the 3.2 or higher SX Safety Laser Scanner Software.
6. From the menu bar, go to **Scanner > Discovery**.
7. Select the desired scanner (new Master) from the list in the column on the left of the window. If needed, align the scanner to the computer's network (or align the computer to the scanner's network). Verify the master scanner and its connected remote scanners display in the central part of the window.
8. In the menu bar, go to **Scanner > Update Firmware**.
9. Enter the device password (the default password is `admin`).
The software takes you to the **Firmware Update** screen.
10. Click **Select**, browse to the file location of the update package (`sls_STM32F373VC-3.2.0.866_all_components.package`), and select the package.
11. Click **Load** in the new **Configuration Upload** pop-up window.
12. When the warning: **Scanner status change to Off-Duty** displays, select **OK**.
The load process can take several minutes to complete.
13. After the firmware is loaded, click **Accept** in the **Validation** window to finish the update process.
The master scanner and all connected remote scanners are updated to the firmware version 3.2.0.
14. Return to the software's home screen and select **Open a Safety System Configuration from PC**.
15. Open the configuration file saved in the first step.
16. Load the configuration into the new master scanner and all its remote scanners.
17. Verify the fields are still correct according to the process listed in the SX5 Manual.
18. Select **Accept** to finish loading the configuration.

Replace and Update a Master Scanner in a Cascaded System but Reuse the Memory Card

Follow these steps to replace a master scanner in a cascaded system when you want to keep and reuse the existing removable memory card.

1. Remove the power to the existing master scanner and disconnect the existing master from the cascade system.
2. Remove the Removable Memory unit from the bottom of the old master.
3. Place this removed Removable Memory card onto the new Master after removing its existing Removable Memory card.
4. Connect the new master scanner with the old Removable Memory unit installed to the cascade system.
5. Apply power to the new master scanner and cascade system.
6. Connect the new master scanner to the PC with the SX Safety Laser Scanner Software (v3.2 or newer) installed.
Banner recommends making a point-to-point connection and avoiding hubs or switches.
The new master scanner's display shows **WAITING CONF**.
7. On the master scanner, press one of the two arrow keys next to the display and verify that **ALIGN SW REQ** (firmware alignment required) displays.
This condition should also be displayed on the **Diagnostics** screen of the configuration software.
8. Open the 3.2 or higher SX Safety Laser Scanner Software.
9. From the menu bar, go to **Scanner > Discovery**.
10. Select the desired scanner (new Master) from the list in the column on the left of the window. If needed, align the scanner to the computer's network (or align the computer to the scanner's network). Verify the master scanner and its connected remote scanners display in the central part of the window.
11. In the menu bar, go to **Scanner > Update Firmware**.
12. Enter the device password (the default password is `admin`).
The software takes you to the **Firmware Update** screen.
13. Click **Select**, browse to the file location of the update package (`sls_STM32F373VC-3.2.0.866_all_components.package`), and select the package.
14. Click **Load** in the new **Configuration Upload** pop-up window.

15. When the warning: **Scanner status change to Off-Duty** displays, select **OK**.
The load process can take several minutes to complete.
16. After the firmware is loaded, click **Accept** in the **Validation** window to finish the update process.
The master scanner and all connected remote scanners are updated to the firmware version 3.2.0. After the update is complete, the master scanner displays **WAITING CONF**.
17. Turn the power to the scanners off for five to 10 seconds, then apply power.
After the master scanner powers back up, the master scanner displays **DEVICE EMPTY**.
18. Press the square push button on the master scanner (next to the display), select **Restore cfg** and then **Confirm**.
The display shows **RES IN PROCESS**. The restore can take a few minutes. At the end of the restore process, the display lists these two options: **PRESS > TEST** or **PRESS ↓ > EXIT**.
19. Press the square pushbutton and verify the scanner display shows **GO, STOP**, and **WARNING** (with a white background, OSSD off) appropriate to the previously set areas.
20. Perform a validation of the fields to ensure they have not changed, following the process described in the SX5 Manual.
21. If everything is fine, press one of the arrow push buttons and select **Validate Conf**.
The display shows **RES VALIDATION**.
22. After the process is complete, the scanner should start working normally (**GO, STOP**, or **WARNING** with a black background on the display).

Replace and Update a Remote Scanner in a Cascade System

Follow these instructions to replace and update a remote scanner in a cascade (master and remote) system.

1. Disconnect the remote(s) scanner from the master scanner.
2. Update the master scanner to the firmware version 3.2 according to ["Update a Single Unit" on page 1](#).
3. Replace the damaged remote scanner with the new remote scanner.
4. Reconnect the remote(s) to the master scanners.
5. Apply power to the cascade system.
6. Verify the **ALIGN SW REG** (firmware alignment required) message displays.
 - If your cascade series contains only a master and one remote scanner, you should only need to update the master scanner.
 - If **DEVICE EMPTY** displays, skip to step 17.

The new master scanner's display shows **WAITING CONF**.
7. Connect the new master scanner to the PC with the SX Safety Laser Scanner Software (v3.2 or newer) installed.
Banner recommends making a point-to-point connection and avoiding hubs or switches.
8. Open the 3.2 or higher SX Safety Laser Scanner Software.
9. From the menu bar, go to **Scanner > Discovery**.
10. Select the desired scanner (new Master) from the list in the column on the left of the window. If needed, align the scanner to the computer's network (or align the computer to the scanner's network). Verify the master scanner and its connected remote scanners display in the central part of the window.
11. In the menu bar, go to **Scanner > Update Firmware**.
12. Enter the device password (the default password is admin).
The software takes you to the **Firmware Update** screen.
13. Click **Select**, browse to the file location of the update package (sls_STM32F373VC-3.2.0.866_all_components.package), and select the package.
14. Click **Load** in the new **Configuration Upload** pop-up window.
15. When the warning: **Scanner status change to Off-Duty** displays, select **OK**.
The load process can take several minutes to complete.
16. After the firmware is loaded, click **Accept** in the **Validation** window to finish the update process.
The master scanner and all connected remote scanners are updated to the firmware version 3.2.0. After the procedure is complete, the master scanner displays **DEVICE EMPTY**.
17. Press the square push button on the master scanner (next to the display), select **Restore cfg** and then **Confirm**.
The display shows **RES IN PROCESS**. The restore can take a few minutes. At the end of the restore process, the display lists these two options: **PRESS > TEST** or **PRESS ↓ > EXIT**.
18. Press the square pushbutton and verify the scanner display shows **GO, STOP**, and **WARNING** (with a white background, OSSD off) appropriate to the previously set areas.
19. Perform a validation of the fields to ensure they have not changed, following the process described in the SX5 Manual.
20. If everything is fine, press one of the arrow push buttons and select **Validate Conf**.
The display shows **RES VALIDATION**.
21. After the process is complete, the scanner should start working normally (**GO, STOP**, or **WARNING** with a black background on the display).