

# OCS Firmware Update Manual

## OCS – Boot Loader Guide

### 1. Introduction

This guide details how to update or change firmware on the Horner OCS Controllers. Updating firmware to the newest version adds new benefits to the controller. Also, changing firmware is necessary when changing communications between CsCAN and CANopen.

### 2. Details

**Note: Updating firmware will clear the application program, screens, configurations, and register data.** If required, make sure to backup program and register data before updating firmware. The controller's User Manual has instructions for doing backups.

There are two methods for updating firmware. The method used depends on the type of controller being updated.

**Method A: Removable Media Method** – The controller firmware is updated by a bootloader, using a MicroSD card or USB Flash drive (**not through the Cscape Firmware Update Wizard**). To update or change firmware:

- 1) Download desired Firmware set from the Horner APG website. (Verify CsCAN or CANopen communications.)
- 2) Save Firmware files to MicroSD card or USB, these are the removable media devices.
- 3) Update the firmware through the controller's Firmware Update function

**Method B: RS232 Serial Connection** – Serial firmware updates are done from Cscape software to the controller's primary serial port, MJ1 in most cases.

### STEP ONE:

In North America, visit <https://hornerautomation.com> and click **LOG IN** (an account is required to access firmware updates, create one if necessary). Go to **Support** → **Controller Firmware** and download the most recent firmware set with the correct communication protocol.

**-OR-**

In Europe, visit <http://www.horner-apg.com/en/download/ocs.aspx> and click the **Firmware** tab and download the desired firmware (an account is required to access firmware updates, create one if necessary).

## Firmware Update for XL4, XL7, EXL6, or EXL10

Update firmware in an XL4, XL7, EXL6, or EXL10 by completing the following steps:

- a. Unzip all files from downloaded .zip file (Step One, p.1) onto removable media.
- b. Plug the removable media into a powered-up OCS controller.
- c. Press and hold the **SYSTEM** key until the **Boot Installer Screen** appears.
- d. Press the **Install Bootloader** button and then press **Yes**.
- e. When **Operation Completed** appears, press **OK**.
- f. Power-cycle the OCS controller and wait for it to boot up.
- g. Press **SYSTEM** key, select **View Status** and press the **Enter** button.
- h. Scroll down to see the version numbers.
- i. If any of the version numbers are incorrect, verify the correct files were copied to the removable media device and repeat the steps above.

## Firmware Update for ZX

Update firmware in a ZX by completing the following steps:

- a. Unzip all files from downloaded .zip file (Step One, p.1) onto a USB Flash drive.
- b. On the USB Flash drive, rename one of the following files to **syslinux.cfg**:  
  

|                            |                           |
|----------------------------|---------------------------|
| <b>syslinux.cfg_zx452</b>  | [to upgrade a 7" ZX452]   |
| <b>syslinux.cfg_zx752</b>  | [to upgrade a 15" ZX752]  |
| <b>syslinux.cfg_zx1152</b> | [to upgrade a 22" ZX1152] |
- c. Plug the USB Flash drive into a powered-up ZX.
- d. Touch the upper-right-hand screen corner to slide out the control panel.
- e. If ZX firmware is 14.00 or later, press and hold the **SYSTEM** key until the **Boot Installer** screen appears.
- f. If the ZX firmware is less than 14.00, press and hold the **F5** key until the **Boot Installer** screen appears.
- g. Press the **Install Bootloader** button and then press **Yes**.
- h. When **Operation Completed** appears, press **OK**.
- i. Power-cycle the ZX and wait for it to boot up.
- j. Touch the upper-right-hand screen corner to slide out the control panel.
- k. Press **SYSTEM** key, select **View Status** and press the **Enter** button.
- l. If any of the version numbers are incorrect, verify the correct files were copied to the USB Flash drive and repeat the steps above.

## Firmware Update for X5 or XL+

- 1) Update firmware in an X5 or XL+ by completing the following steps:
  - a. Unzip all files from downloaded .zip file (Step One, p.1) onto removable media.
  - b. Plug removable media into a powered-up controller.
  - c. Touch the upper-right-hand screen corner to slide out the control panel.
  - d. Press and hold the **SYSTEM** key until the **Boot Installer** screen appears.
  - e. Press the **Install Bootloader** button and then press **Yes**.
  - f. When **Operation Completed** appears, press **OK**.
  - g. Power-cycle the controller and wait for it to boot up.
  - h. Touch the upper-right-hand screen corner to slide out the control panel.
  - i. Press **SYSTEM** key, select **View Status** and press the **Enter** button.
  - j. If any of the version numbers are incorrect, verify the correct files were copied to the removable media device and repeat the steps above.

## Firmware Update for RCC Controllers

### LED - Normal Functionality

| LED        | Off              | ON               | Flash (1Hz)          |
|------------|------------------|------------------|----------------------|
| <b>PWR</b> | No power applied | 10-30Vdc applied |                      |
| <b>OK</b>  | Self test fail   | Self test pass   | I/O forcing enabled. |
| <b>RUN</b> | Stop mode        | Run Mode         | Do I/O Mode.         |

### Switch - Normal Functionality:

#### A. Load Switch

1. Pressing the **LOAD** switch during power-up boots from the MicroSD card. This starts a Firmware Load if the MicroSD is bootable and valid firmware files are found on it.
2. After boot-up, pressing the **LOAD** switch for three (3) seconds either starts a Firmware Load or an Application Load depending upon what files are found on the MicroSD. If firmware files are found, a Firmware Load is performed. If firmware files are not found and the DEFAULT.PGM file is found, an Application Load is performed.

#### B. Run/Stop Switch

1. After boot-up, pressing the **RUN/STOP** switch for three (3) seconds toggles the RCC between RUN and STOP modes.

## Firmware Update for the XLE/XLT, RX371, NX, RCS, RCX, XL6, or XL10

Update firmware in an XLE/XLT, RX371, NX, RCS, RCX, XL6, or XL10 by completing the following steps:

- a. Connect to the MJ1/Port 1 programming port with Cscape software.
- b. Run the executable file downloaded from the Horner website (Step One, p.1), which will place firmware files in default folder locations.
- c. In Cscape open a new or existing project .csp file, click **File → Firmware Update Wizard**.
- d. In **Firmware Update Wizard**, verify that the product type matches the connected device. Then select the appropriate CAN network option. The default option is CsCAN; if unsure, leave as default. Click **Ok**.
- e. You may receive a Warning window referring to firmware updates using high-speed communications. Click **Ok**.
- f. In the **Firmware Update** window, click **Start**.
- g. Once the download has completed, click **Close**. Click **Ok** in the Update Complete window.
- h. Verify in **View Status** in the **System Menu** that the desired firmware has been loaded.

## 10. Technical Support

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