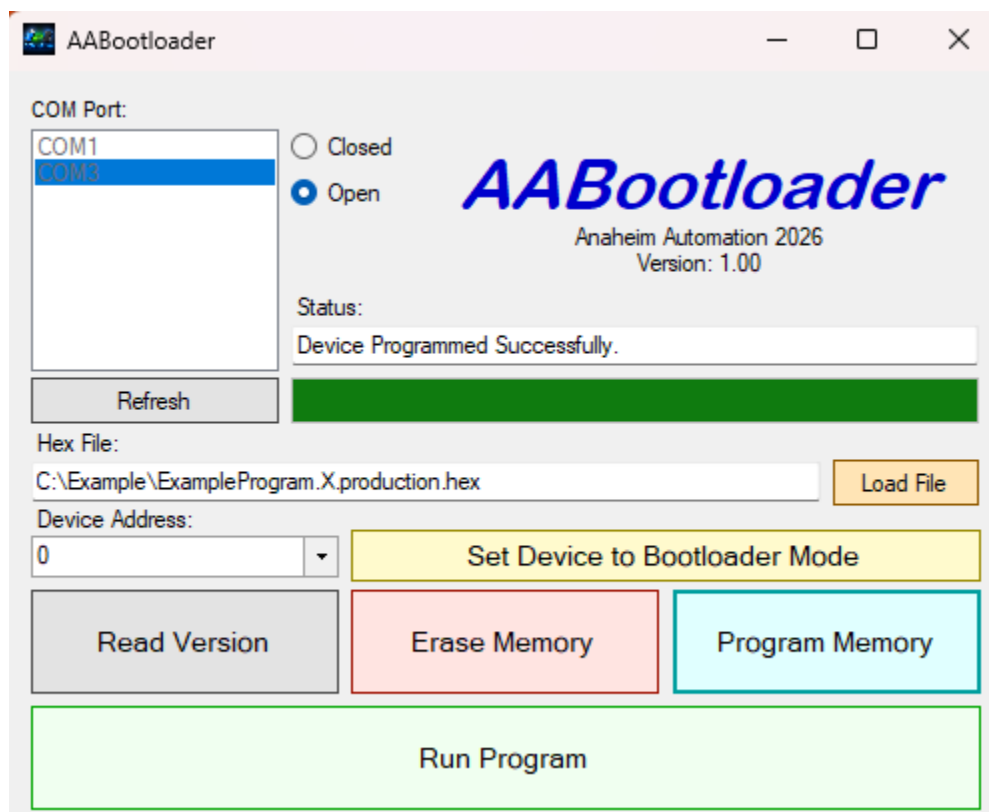


AABootloader

For Anaheim Automation Motion Controllers

User's Guide



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Section 1: Introduction

The AABootloader software provides a simple and convenient way to update and maintain Anaheim Automation Motion Controllers. Firmware updates, bug fixes, and feature enhancements can be installed directly by the user without returning the device for service.

To update a controller, simply connect the device to a computer via USB, launch the AABootloader software, and load the provided HEX firmware file. The software will then program the controller with the latest firmware, allowing devices to be updated quickly and efficiently wherever they are deployed.

Disclaimer: Although **proper use** of the AABootloader software often comes with **little to zero risk**. **Improper use** of the AABootloader software can **potentially damage or “brick”** the AA motion controller. In which case, the **only fix is to return the device for service or replace with a new device**. Please follow the **Usage guide(found on page. 6)** carefully to avoid any potential problems.

Baud Rate

A term used frequently in serial data communications, a “baud” is defined as the reciprocal of the shortest pulse duration in a data word signal, including start, stop, and parity bits. This is often taken to mean the same as “bits per second”, a term that expresses only the number of “data” bits per second. Very often, the parity bit is included as an information or data bit. **The virtual comport that communicates with AA Motion Controllers through the computer’s USB port accepts a baud rate of 38400 only.**

Section 2: Functions

Load File: This allows the user to load a program hex file for use in the AABootloader software.

Device Address: This allows the user to select the address of the device being accessed by the bootloader on the opened COM Port.

Set Device to Bootloader Mode: Allows the user to set the device to bootloader mode.

Read Version: This operation will read the firmware version number of the AA motion controller and display it as a two-byte hex value. Example: “01 0A” => V1.10

Program Memory: This uses the loaded program hex file to program the firmware into the AA motion controller.

Run Program: This resets the AA motion controller to run the newly programmed firmware.

Section 3: AABootloader Software

The AABootloader Software is a helpful and convenient tool specifically designed for Anaheim Automation Motion Controllers. Connecting your PC to an AA Motion Controller, via a USB cable, the AABootloader software can easily perform the following tasks:

- Read and verify the version of the firmware.
- Load a program hex file and re-program the AA motion controller.
- Reset the AA motion controller to start the device.

Installation

Software

- The AABootloader is provided on the Anaheim automation website. The downloadable file contains the setup program for the AABootloader software and the AABootloader user manual.

Windows 10/11 Installation

1. Download software from the Anaheim Automation Website.
2. Unzip the file.
3. Double click on the **setup** application file.

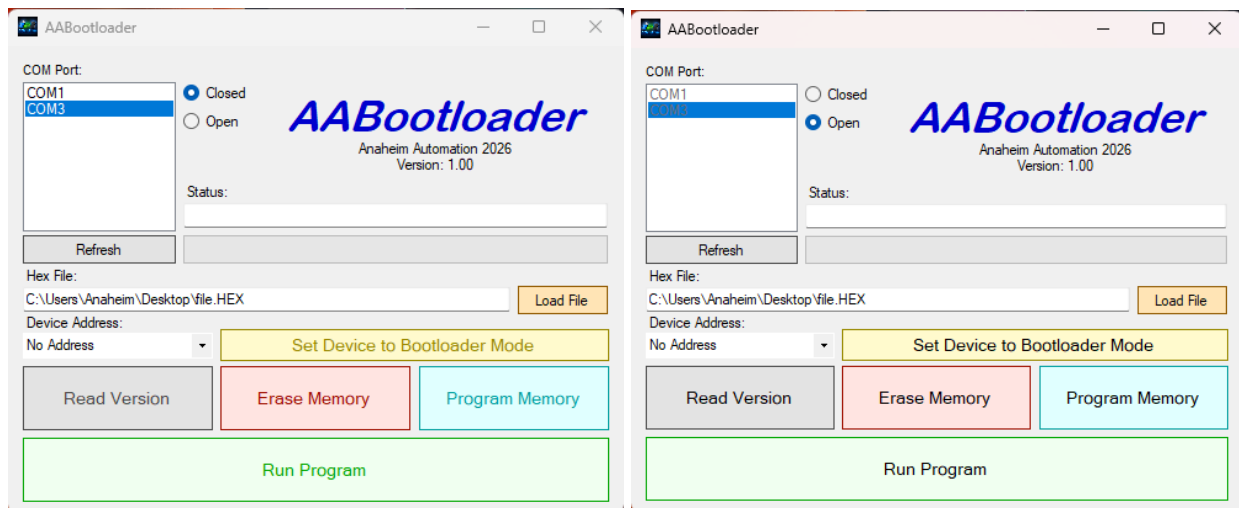
Getting Started

1. Double click on the AABootloader icon to run the AABootloader software.
2. Apply power(See device manual for voltage requirements) to the AA Motion controller.
3. Set the appropriate COM port from the Com Port list.
4. Establish communications with the AA motion controller by clicking on the “open” radio button.
If the unit is connected properly, the software will unlock the UI allowing interaction with the software.

Changing the COM Port Number of the USB Port

1. From **Device Manager**, select **View Device by Type**, then **Ports(COM & LPT)**. Select the USB serial port and click **Properties**. Select the **Port Settings** tabs, then click **Advanced**.
2. Choose the required COM port number from the list and click **OK**.

Software Overview



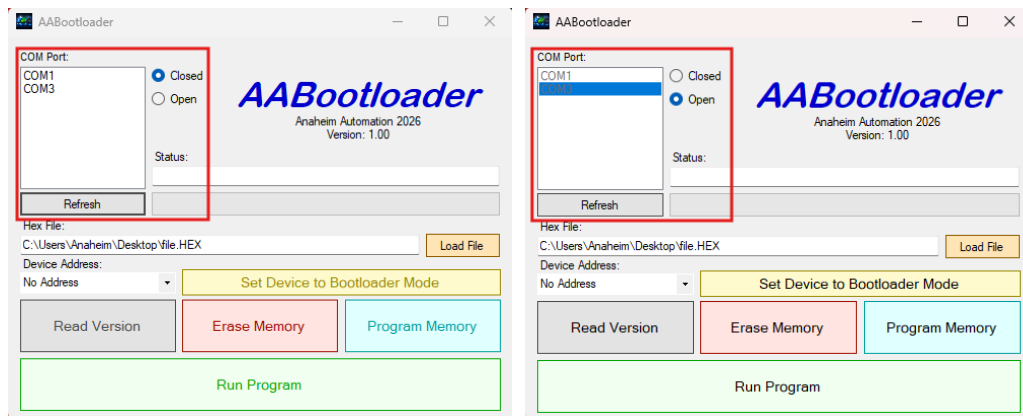
COM Port	Lists the available COM ports, select the appropriate port and click “Open” to connect to the AA motion controller.
Refresh	Refreshes the list of COM ports.
Status	Displays the status/result of the AABootloader operations as well as a progress bar for visual programming completion feedback.
Hex File	Displays the location of the program hex file.
Load File	Opens the file explorer to select the program hex file to load.
Device Address	The programmed address of the device being referred to on the COM Port.
Set Device to Bootloader Mode	Sets the device at the designated address on the COM Port to bootloader mode.
Read Version	Reads the firmware version number of the AA motion controller.
Erase Memory	Completely erases the device firmware of the AA motion controller.
Program Memory	Programs the AA motion controller firmware with the loaded program hex file.
Run Program	Resets the AA motion controller to run the newly programmed firmware.

Section 4: Step-By-Step Usage Guide

Step 1: Power on the AA Motion Controller and plug it into the computer via USB cable.

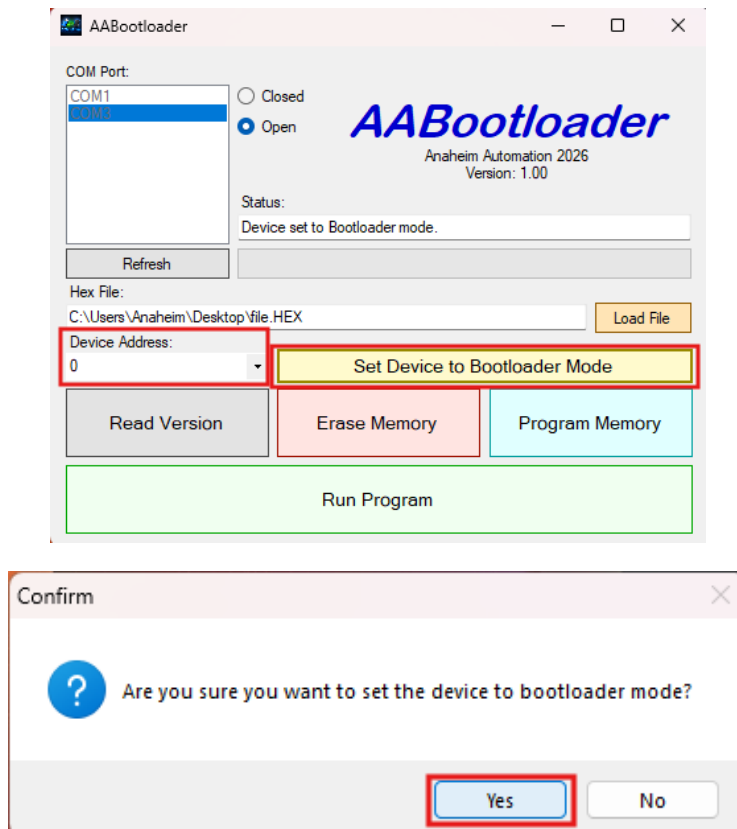
Step 2: Open the software and connect to the COM port

Using the COM Port list, select the appropriate COM port for the AA motion controller and select the radio button to the right labeled “Open”.



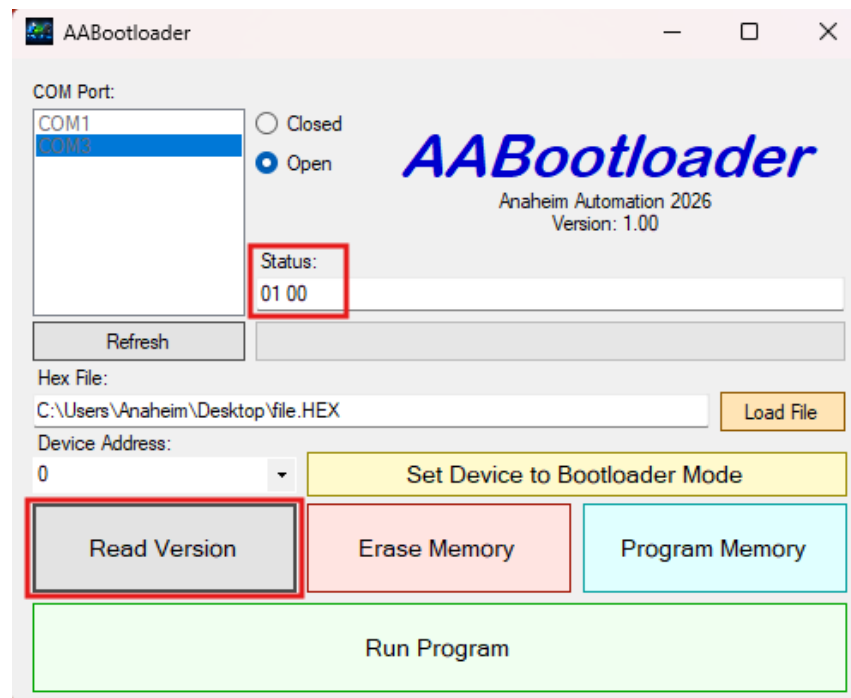
Step 3: Select the appropriate address and Set Device to Bootloader Mode

Using the Device Address drop down menu, Select the correct device address and click the “Set Device to Bootloader Mode” button.



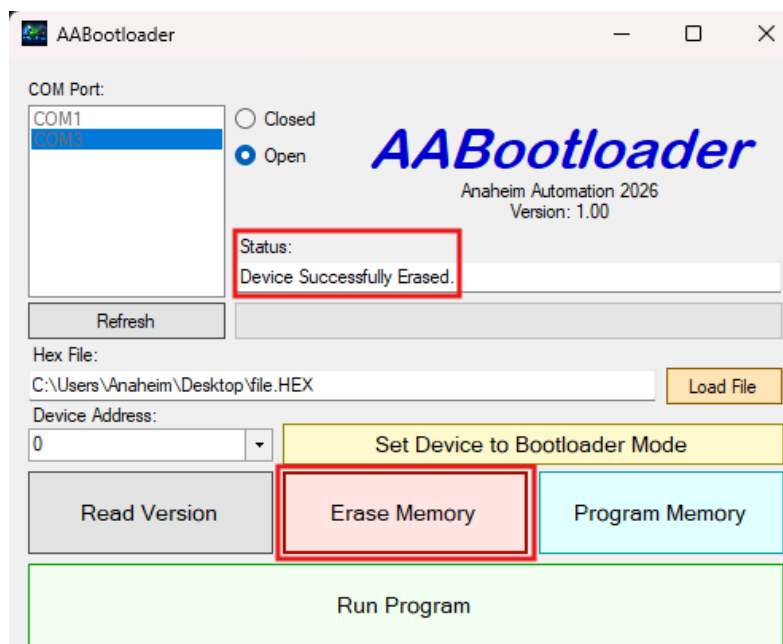
Step 4: Read version to verify firmware and connection.

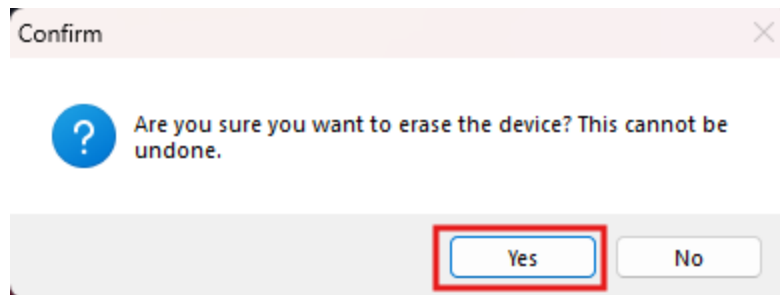
Click “Read Version” to read the version of the firmware installed on the device, the version will show up as a Two-Byte Hex value.



Step 5: Erase the current device firmware.

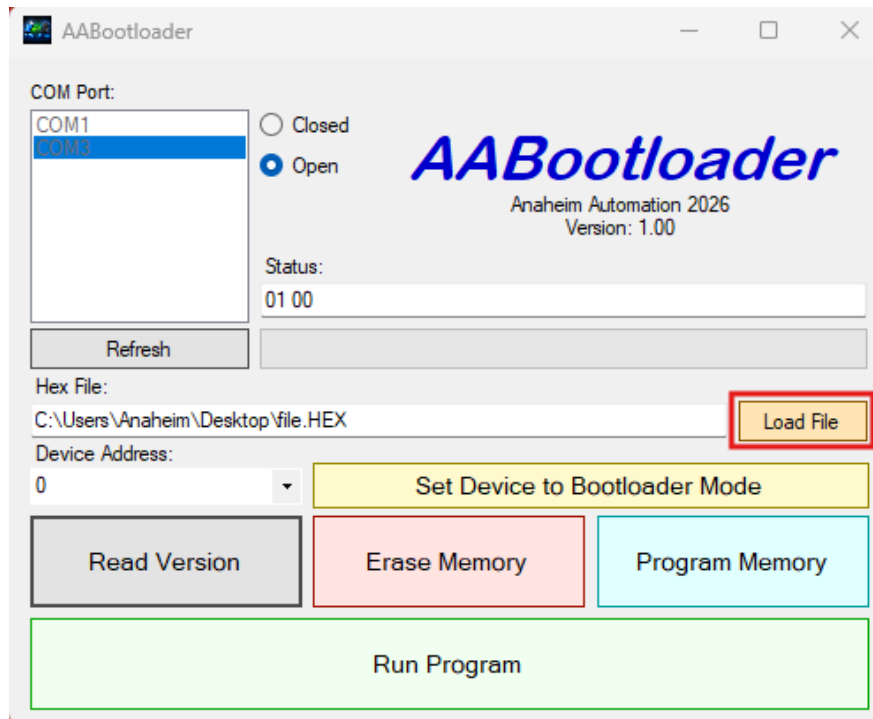
Click “Erase Memory” to erase the current device firmware. The software status will update when erasing is complete. ***Do not close the software or power off the device while erasing or programming the firmware to avoid any complications.***



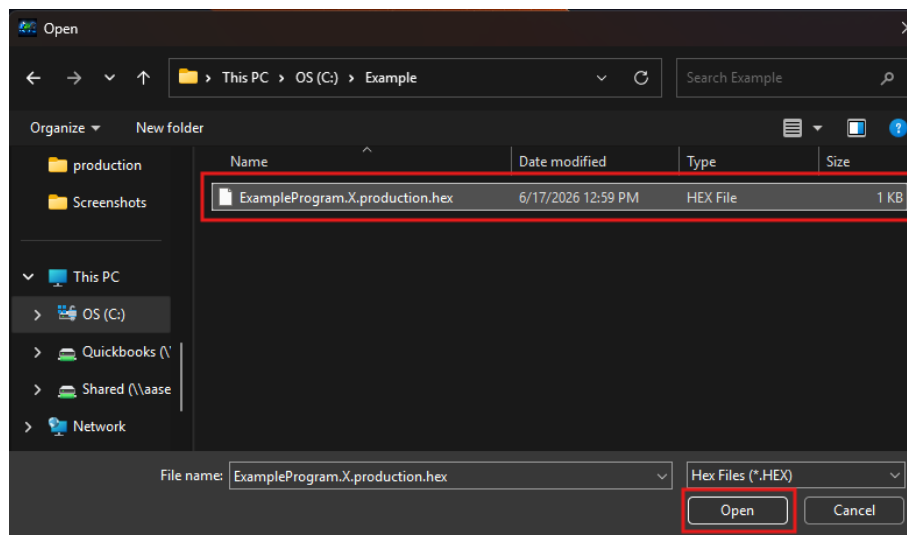


Step 6: Load the appropriate program hex file.

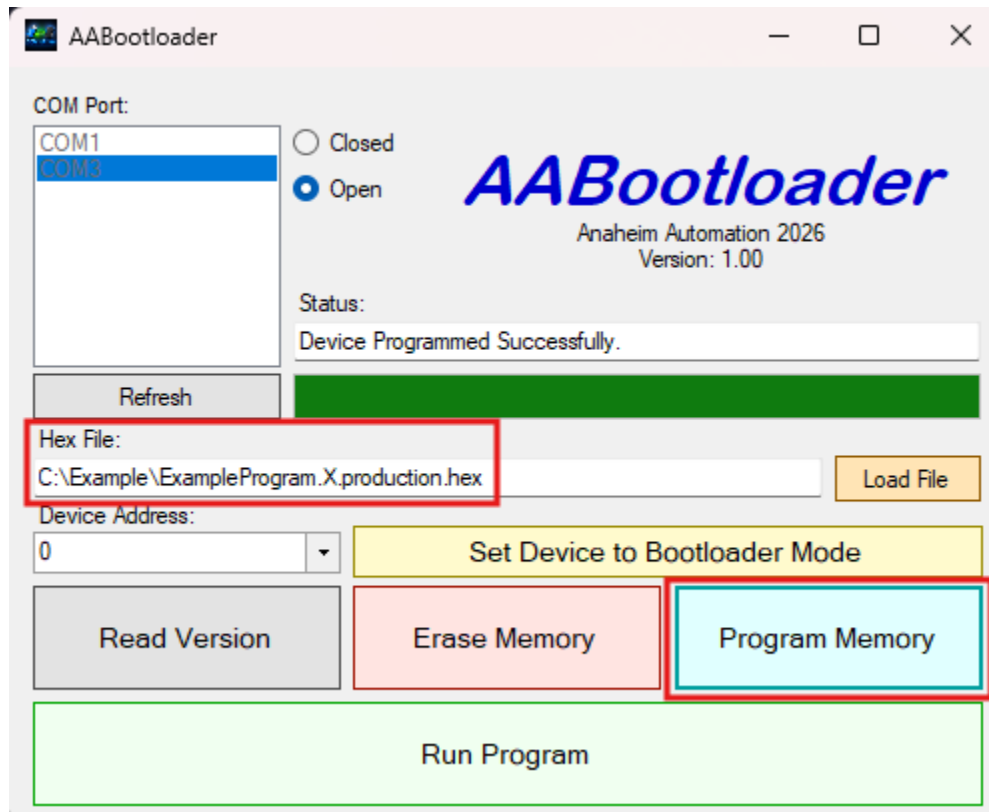
- a) Click the orange “Load File” button, file explorer should appear.



- b) Find the Appropriate program hex file for the AA motion controller and “open”.



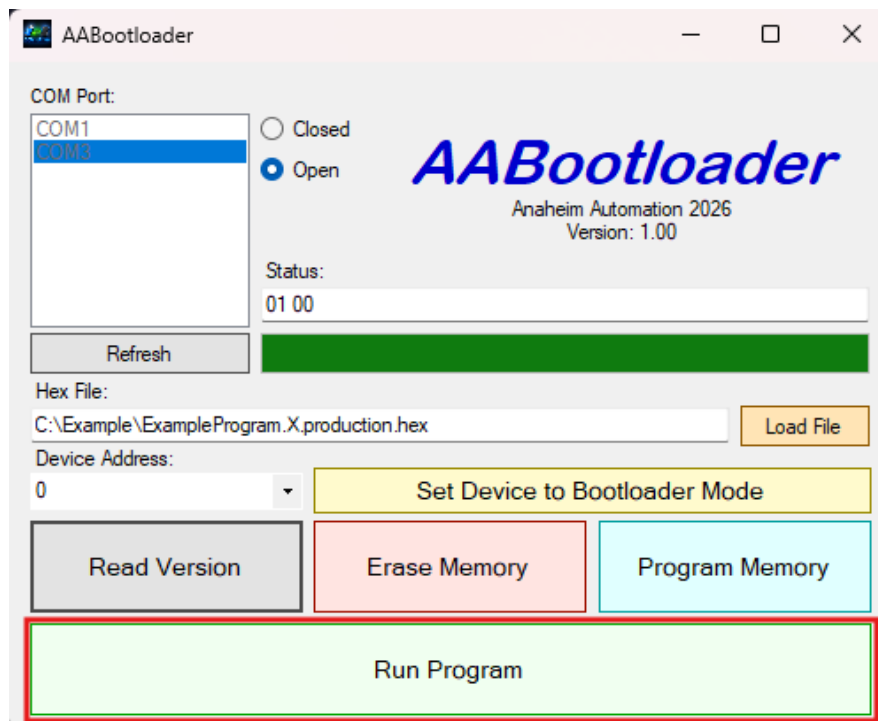
c) Verify that the right program hex file was loaded, then click the “Program Memory” button.



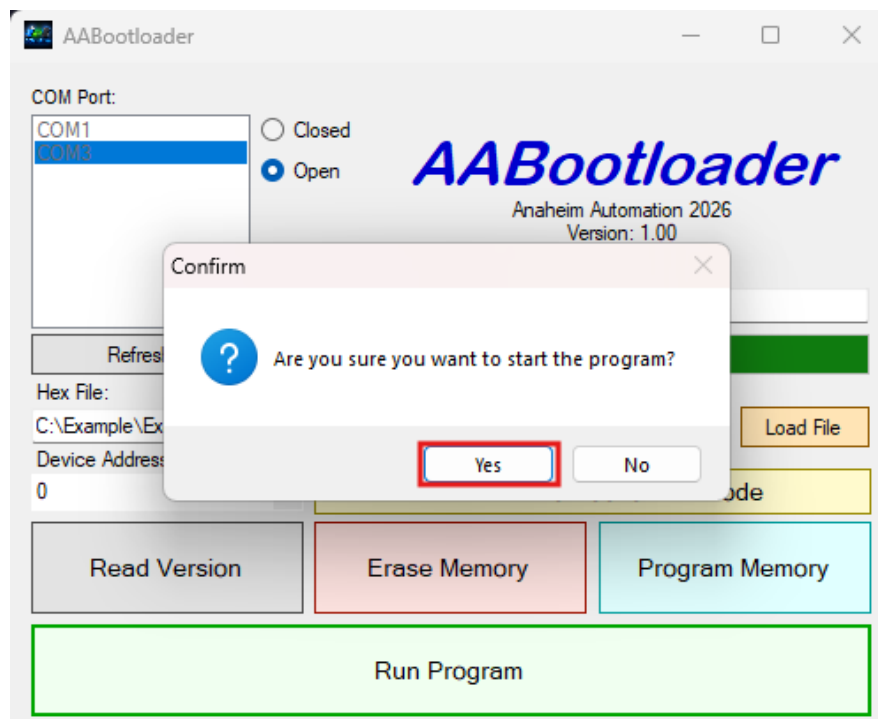
d) When the AABootloader is done programming, “Read Version” to verify integrity.

Step 6: Run the program

- a) Click the “Run Program” button to start the program.



- b) A confirmation dialog will pop up, click “Yes” to continue. **WARNING: Please make sure the device was programmed with the appropriate program hex file before running the program.**



- c) The AABootloader will reset the device, and the program is now running.

Section 5: Troubleshooting

Problem:

Cannot establish communications with the AA motion controller.

Possible Solutions:

- 1) Make sure the AA motion controller has power. Is the green power LED on?
- 2) Check the USB connections.
- 3) Check for loose cable connections either on the AA motion controller or USB port.
- 4) Was the software installed successfully?
- 5) Go to AABootloader software, verify COM port settings.
- 6) Click on the “**Open**” radio button to communicate with the AA motion controller.
- 7) If problems still exist, contact Anaheim Automation Tech Support.

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Problem:

AA motion controller does not run the program

Possible Solutions:

- 1) Click on the “Run Program” button to start the firmware.
- 2) Verify that the correct program has been loaded and programmed into the AA motion controller.
- 3) Use the universal verify command “\$” in Tera Term to verify the firmware and version of the AA motion controller.
- 4) If problems still exist, contact Anaheim Automation, Inc. Tech Support.

Appendix 1: Software Revisions

Version 1.00 - Initial Release.

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