APL-SI-0031

UPDATING CONTROLLER FIRMWARE VERSION

PROCEDURE

SUBJECT:

SERVICE & MAINTENANCE

ASSEMBLY NO:	APPLICABILITY:
A0110*x* | A0170*x*	AC200 controller hardware versions 5 and up. All AC300 controller versions

1.   TOPIC

1.1   Introduction

This instruction covers the procedure for updating the firmware version for an Airmaster controller.

This instruction applies for AC200 controller hardware versions 5 and higher, and all AC300 controller hardware versions (for DSD systems). This task is performed using Airmaster flash software running on a Microsoft Windows PC; a laptop is recommended so that it may be taken to the controller inside the cockpit.

Controller firmware should only be updated when directed to by Airmaster.

1.2   Prerequisites

Complete the following tasks before proceeding:

- Ensure that PC is updated to include .NET Framework 3.5
  https://www.microsoft.com/en-us/download/details.aspx?id=21

- If applicable, ensure that AC200 controller hardware is version 5 or higher.

> ⓘ *Note*
> *The controller hardware version is recorded in the AC200/AC300 Firmware & Parameters sheet (found in the propeller assembly drawings booklet). It is the first number shown under "Hardware Build State".*

2.   MATERIAL REQUIREMENTS

2.1   Parts

ITEM	QTY	PART NO.	DESCRIPTION	IMAGE
1.	1	A0117	USB-Serial Cable	
2.	2	A0110x or A0170x	AC200 or AC300 'SmartPitch' Controller	

2.2   Tooling

ITEM	QTY	DESCRIPTION	IMAGE
1.	1	MS Windows Laptop	
2.	-	Controller Firmware Programmer (*.exe*)	
3.	-	Controller Firmware File (*.bin*)	

2.3   Paperwork

ITEM	QTY	CODE	DESCRIPTION
1.	1	AD-UNIVERSAL	AC200/AC300 Firmware & Parameters Sheet
2.	1	AD-UNIVERSAL	Airmaster Propeller Logbook

3.   PROCEDURE

3.1   Download Controller Firmware Programmer
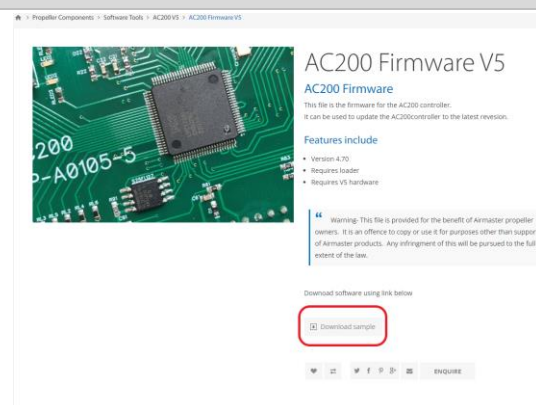
> ### *Procedure:* *Downloading Controller Firmware Programmer*

Step 1 *Download Controller Firmware File*

- Download the latest applicable controller firmware file *(.bin)* from the Airmaster website:

  o   AC200 v5:
  https://propellor.com/ac200-firmware-v5

  o   AC300:
  https://propellor.com/ac300-firmware-update-utility

Step 2 *Download Firmware Programmer*

- Download the latest applicable version of the controller firmware programmer:

  o   AC200 v5:
  https://propellor.com/firmware-update-utility

  o   AC300:
  https://propellor.com/ac300-firmware-update-utility
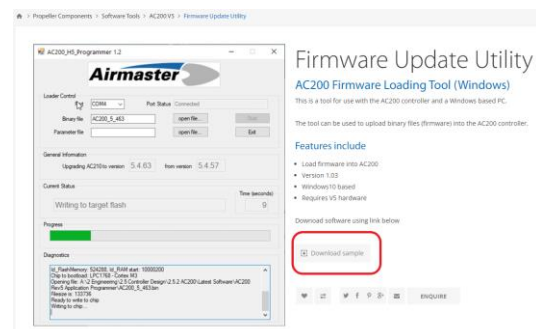
ⓘ Note

For v3 or v4 AC200 hardware, an alternative "FlashLoad" programmer must be used instead. This procedure is covered in a separate instruction.

ⓘ Note

This application is only compatible with Microsoft Windows operating systems.

Step 3 Install USB Driver (As Required)
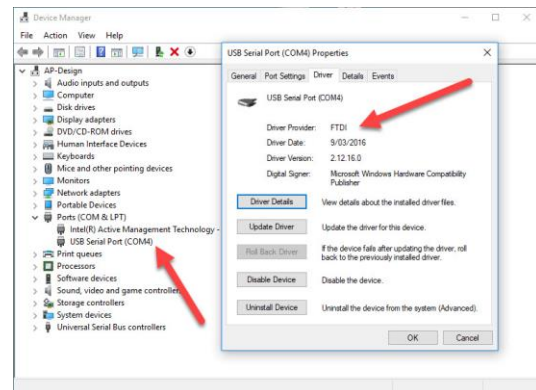
- When the USB-serial cable (*A0117*) is connected to a PC for the first time, the required USB driver must be downloaded:

> ⓘ *Note*
>
> *Generally, this task is completed automatically on Windows 10 operating systems.*

  - o Visit link below and download the "Setup Executable" for your operating system. *https://www.ftdichip.com/Drivers/VCP.htm*

  - o Open the setup .zip file and choose a convenient folder to unzip the executable.

  - o Confirm, accept, and finish the extraction.

  - o Check the COM port assigned to the USB-serial cable: Control Panel >Device Manager > USB Serial Port > Driver.

3.2   Update Controller Firmware

> ⚠ **Caution**
>
> *Only update the controller firmware when directed to by Airmaster.*

Procedure: *Updating Controller Firmware*

Step 1   Connect Controller to PC

- Plug USB-Serial cable (A0117) into USB port on PC.

- Plug USB-serial cable (4-way connector) into rear of controller [CN4].

- Apply power to the controller by turning on the aircraft power supply.

Step 2   Run Application

- Run the controller firmware programmer.

> ⓘ *Note*
>
> *A warning window may appear before opening the programmer. This is normal, select More Info > Run Anyway.*

> ⓘ *Note*
>
> *The program can't be run if another Airmaster application is open which is accessing the same COM port for the USB-serial cable.*
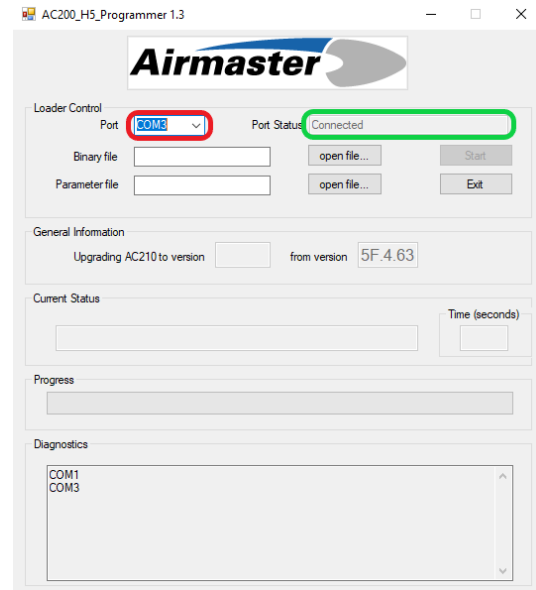
Step 3   Select COM Port

- Select the COM port assigned to the USB-serial cable from the drop-down menu.

> ⓘ *Note*
> *Check this setting on PC under Control Panel > Device Manager > Ports > USB Serial Port (COM_).*
>
> ⓘ *Note*
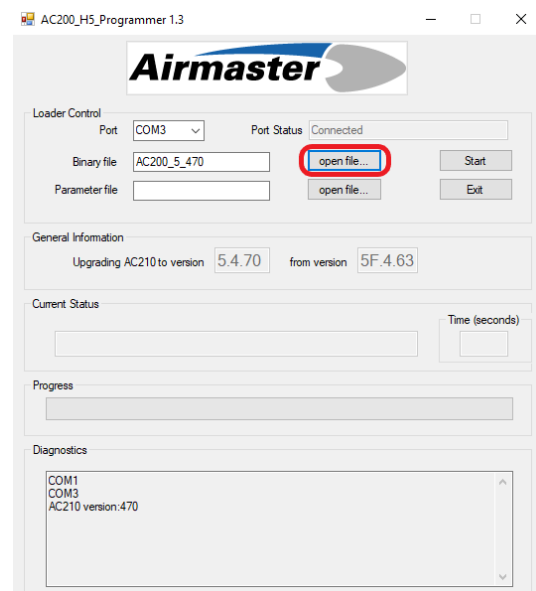> *The port status should show "Connected".*

Step 4   Load Firmware File

- Press 'Open File' and select the firmware file (.*bin*) downloaded.

> ⓘ *Note*
> *Uploading a parameter file is optional.*

Step 5   Start Firmware Update

- Press 'Start' to commence the automatic flash firmware update.

⚠️ **Caution**

Do not interrupt the flash update as this may corrupt the controller. Wait for the progress bar to complete 100% before exiting the programmer.
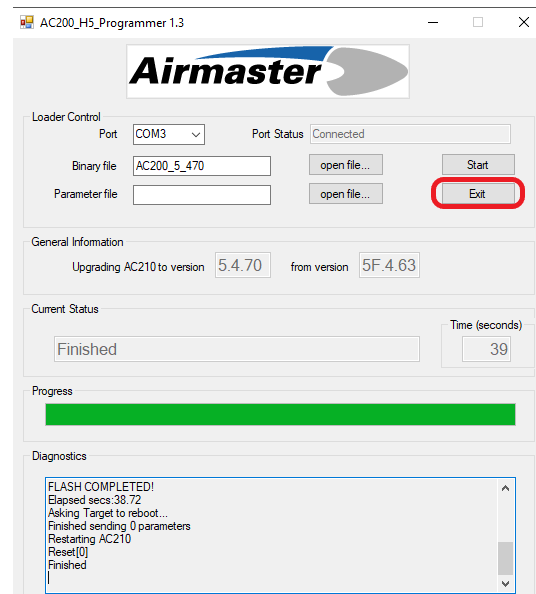
ⓘ **Note**

If the flash update does not start automatically, reset the controller by pressing the circuit breaker (FS1) located at the rear, then (promptly) recommence the flash update.
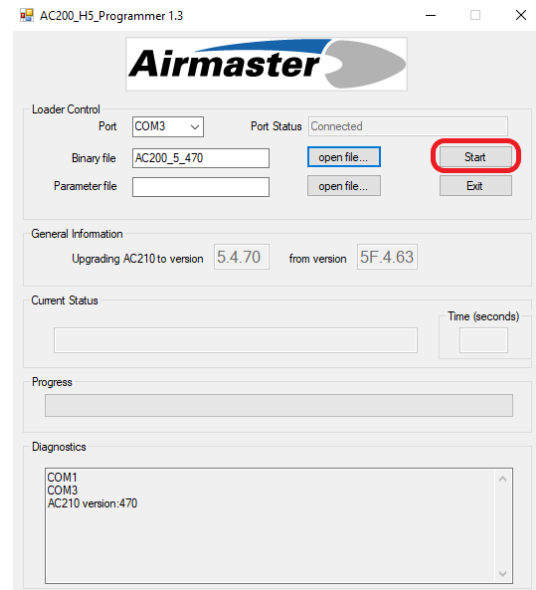
Step 6   Close Programmer

- Exit the programmer once the flash update progress is 100% completed.

3.3   Subsequent Action

Perform the following tasks once this procedure is complete:

- Record firmware update in the propeller logbook.

- Check with Airmaster if any parameters must be adjusted for the new firmware version.

- Record, sign and date the updated "Controller Firmware Version" under a new column of the "AC200/AC300 Firmware & Parameters Sheet" (found in the propeller's assembly drawings booklet).

- Use an eraser and pencil to update the firmware version written on the rear controller label.

- Send an email to *support@propellor.com* stating the serial number of the propeller hub and controller, as well as the previous and new controller firmware versions.