

This document describes the steps required to install BLHeli FW – Delta Ray Edition. It is part of BL Heli FW – Delta Ray Edition which can be found here: <https://github.com/imboeschi/BLHeli-FW---Delta-Ray-Edition>.

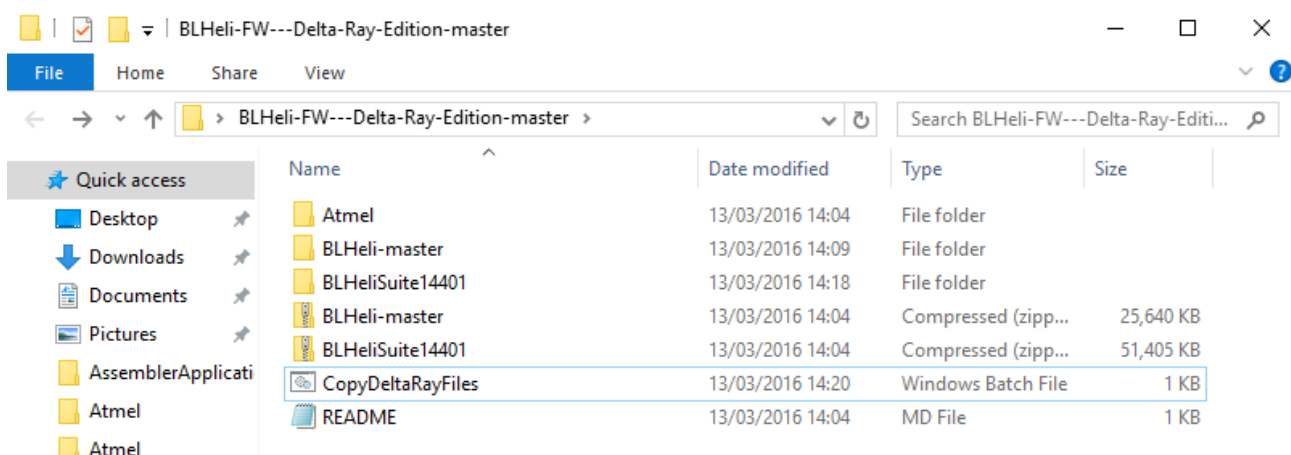
The first section explains the steps to install software if you only want to program ESCs without making changes to the BL Heli FW itself. The second explains the additional steps required to install the development environment if you want to modify the firmware yourself.

This software is only supported on a windows platform. However if you're a Mac user (like I am) you can use a virtual machine such as VMWare Fusion.

1. Installing BLHeli FW - Delta Ray Edition for ESC programming

First download the software from github: <https://github.com/imboeschi/BLHeli-FW---Delta-Ray-Edition>

In the top level of the download are two zip archives, BLHeli-master.zip and BLHeliSuite14401.zip. These are the official releases of the software which function with this Delta Ray version. I don't want to be distributing "unofficial" versions of other people's software so I have elected to keep them in their release form. Unzip both archives into folders within the directory "BLHeli-FW—Delta-Ray-Edition-master." The top level of the directory should now look like this:



You can delete the two zip archives that you just expanded, if you wish.

The next step is to move the modified files for BLHeli FW - Delta Ray edition into the respective locations in BLHeli-master and BLHeliSuite14401. This is done by running the shell script "CopyDeltaRayFiles" located in the main directory.

After that, the Windows application BLHeliSuite (located in the folder BLHeliSuite144101) can be started and Atmel ESCs can be programmed with the modified Delta Ray firmware. SiLabs ESCs will be supported at some point in the future.

Please read the extensive documentation for BLHeliSuite and BLHeli FW for details about flashing and parameterising the ESC.

2. Installing BLHeli FW - Delta Ray Edition for firmware modification

You need to be familiar with assembly-language programming to be able to modify the firmware. A decent tutorial can be found here: http://www.tutorialspoint.com/assembly_programming/index.htm.

In order to modify firmware, you need to install the development environment for Atmel Mega8 microcontrollers, currently at version 7. You can find the software here: <http://www.atmel.com/tools/atmelstudio.aspx>

Please ensure you install the assembler for Mega8 microcontrollers. The full development environment is not necessary but helpful as it includes a rudimentary debugger.

The assembly language files are located in the BLHeli-master/Atmel directory. The main file is BLHeli.asm. The code can be assembled using the MakeHexfiles script. This script also calls CopyHexfiles to move the assembled code into the BLHeliSuite directory for flashing.

At some point in the future SiLabs ESCs will also be supported for the Delta Ray.

Appendix A: Revision history

- 1.0 Initial release
- 1.1 Minor edits and clarifications