

20-00643

HYDROFOILER SL3

SOFTWARE UPGRADE INSTRUCTIONS

**This process is for Hydrofoiler SL3 using
ECS software V0.60 and below,
or Display-Throttle software V0.29 and below.**

**If you have these versions installed on your Hydrofoiler SL3 then it is essential
that you upgrade your SL3 software.**

Introduction

This document provides instructions to upgrade the Hydrofoiler SL3 software.

This is a major software release fixing a severe bug present in both the ECS and the Display-Throttle modules, which if it occurred caused the corruption or loss of the software in either module or rendering the SL3 inoperable.

The bug affects.

- ECS application software versions V0.60 and below.
- Display-Throttle application software versions V0.29 and below.

This process also installs the latest ECS and Display-Throttle bootloader software.

The whole process should take about ten minutes to complete.

You will need

- A PC running Windows 10 or 11.
- Your Hydrofoiler SL3 powered up with a **fully charged** battery.
- The SL3 PC APP Version V0.32 or V0.33 installed and running.
- The SL3 PC APP V0.3x documentation
- The latest SL3 software upgrade files.

The latest SL3 PC, upgrade software, and documentation can be downloaded from the Manta5 website.

[Hydrofoiler SL3 Software - Manta5](#)

Download the Hydrofoiler SL3 PC app user guide

[Hydrofoiler SL3 PC app V0.3x guide](#)

Following this upgrade, the Display-Throttle will need to be re-calibrated. Please download the Display-Throttle Calibration instructions [001529 - Hydrofoiler SL3 Display-Throttle Calibration.pdf](#).

Initial Setup

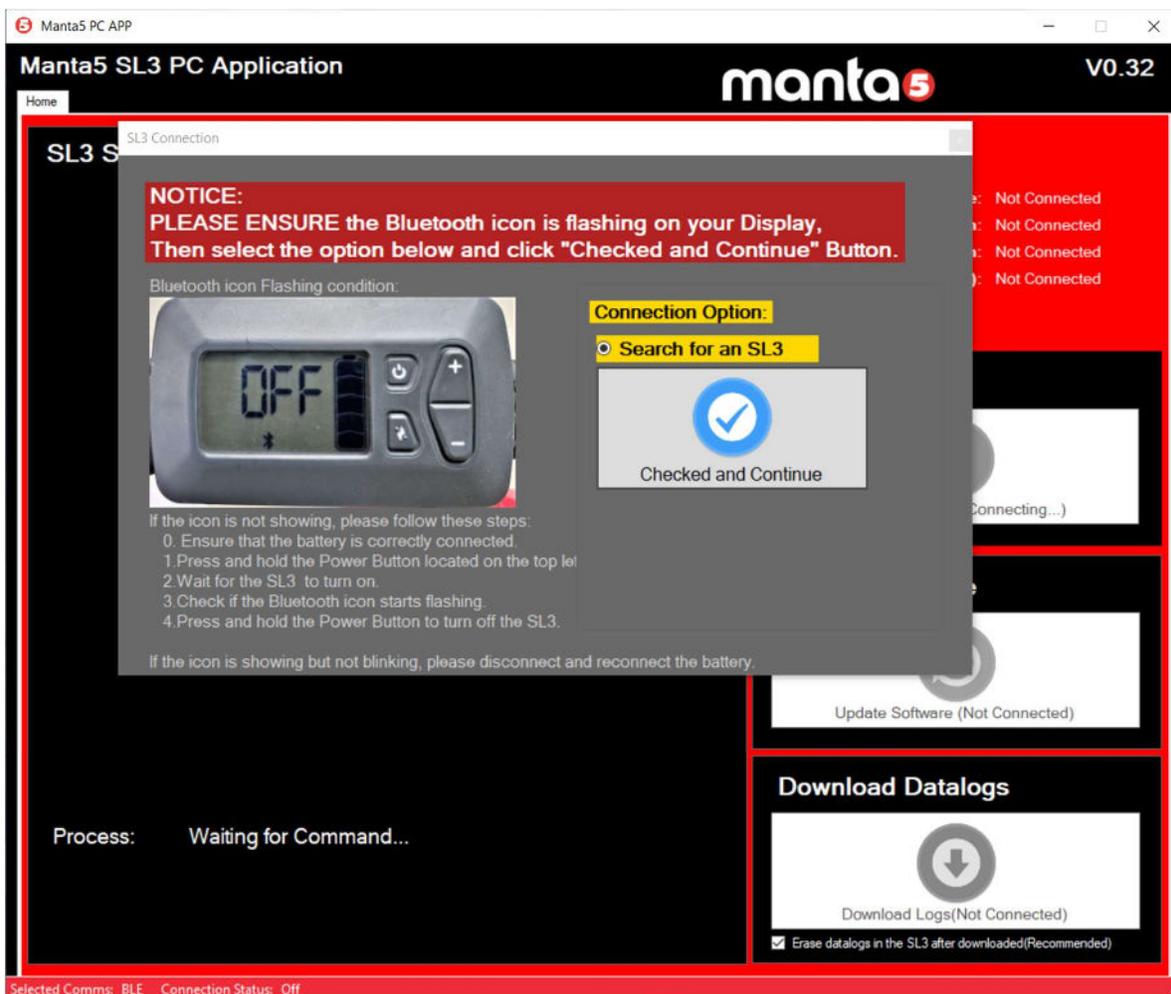
1. Run the SL3 PC Application version V0.32 or V0.33. (Version V0.33 has its button icons arranged horizontally)
2. This will create a directory on your PC called "C:\Manta5\PC_App\software".
3. Copy the upgrade files obtained from the Manta5 website, into this directory.
 - [Display-A000753-V31\[S\].bin](#)
 - [Display-B006370D-V105.bin](#)
 - [ECS-A000764-V73\[S\].bin](#)
 - [ECS-B006370B-V105.bin](#)
4. Before starting the upgrade process. Please familiarise yourself with these instructions and the layout of the SL3 PC Application.
5. **Follow these instructions carefully and you must upgrade the software exactly in the order given.**

Process

Attach the battery to your Hydrofoiler SL3. Check that the Display-Throttle LCD is showing "OFF", and that the Bluetooth icon is flashing.

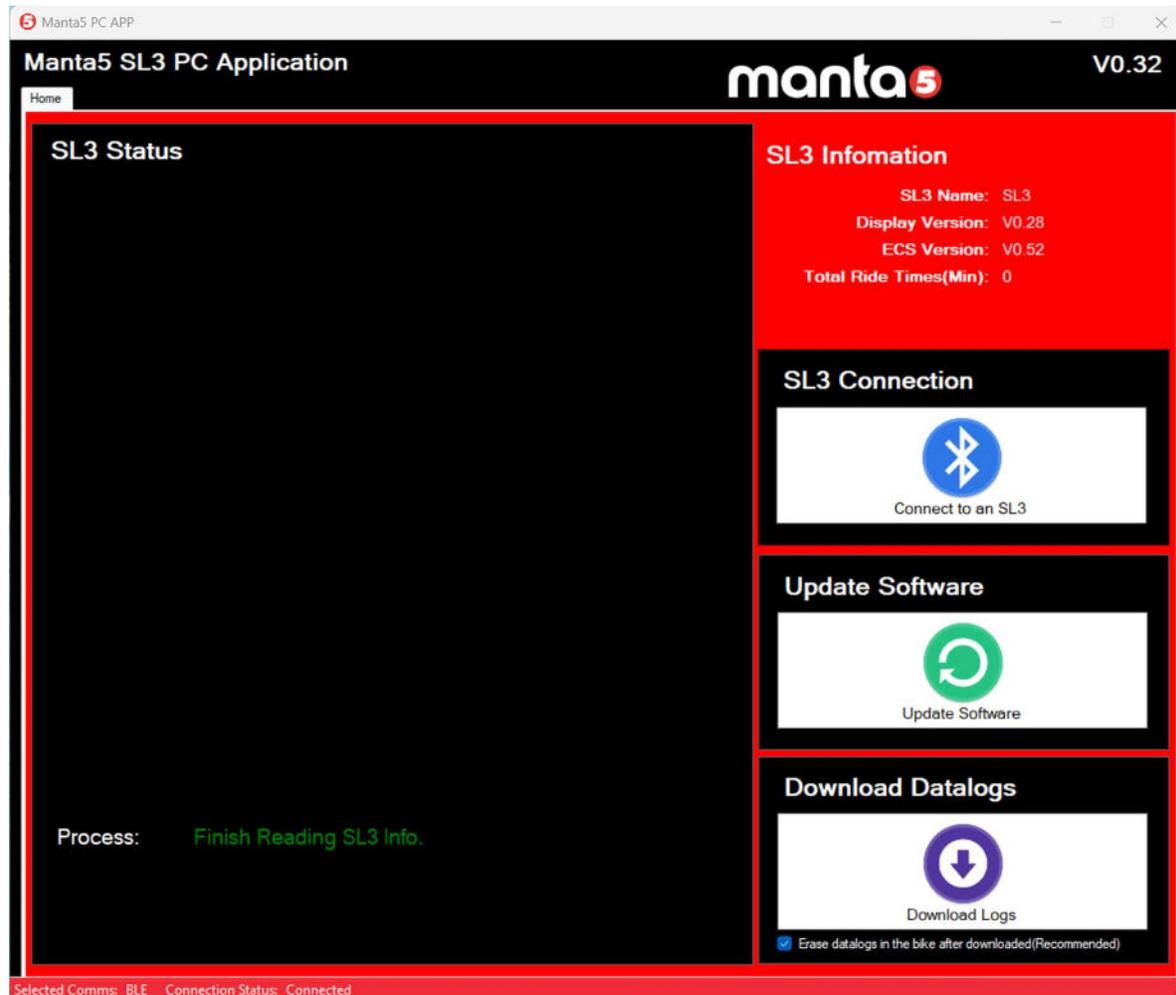
Follow the instructions in the SL3 PC App Guide document to connect the SL3 to the PC App using Bluetooth.

You will need to give the SL3 a name, Manta5 recommend naming it with the last 7 characters of Display Throttle's serial number.



Checking the software version numbers

Once connected via Bluetooth, the SL3 PC application will show the Hydrofoiler SL3 software version numbers for the Display-Throttle unit and the ECS unit in the SL3 Information window shown below.



By double-clicking on either of the version numbers, you can access the Bootloader software version each unit.

After obtaining each of the software version numbers, please check the table below.

Upgrading of each software version should be done in the order shown in the table.

Order	Module	Current version in the SL3	Upgrade	Go to process
1	ECS	BL Version V0.14 (or below)	V1.05	Upgrade ECS Bootloader
2		FW Version V0.60 (or below)	V0.73	Upgrade ECS Application
3	Display-Throttle	BL Version V0.13 (or below)	V1.05	Upgrade Display-Throttle Bootloader
4		FW Version V0.29 (or below)	V0.31	Upgrade Display-Throttle Application

DO NOT UPGRADE THE APPLICATION BEFORE THE BOOTLOADER, THIS WILL CAUSE THE UNIT TO BECOME INOPERABLE AND THE UNIT WILL NEED TO BE RETURNED TO MANTA5 FOR REPROGRAMMING.

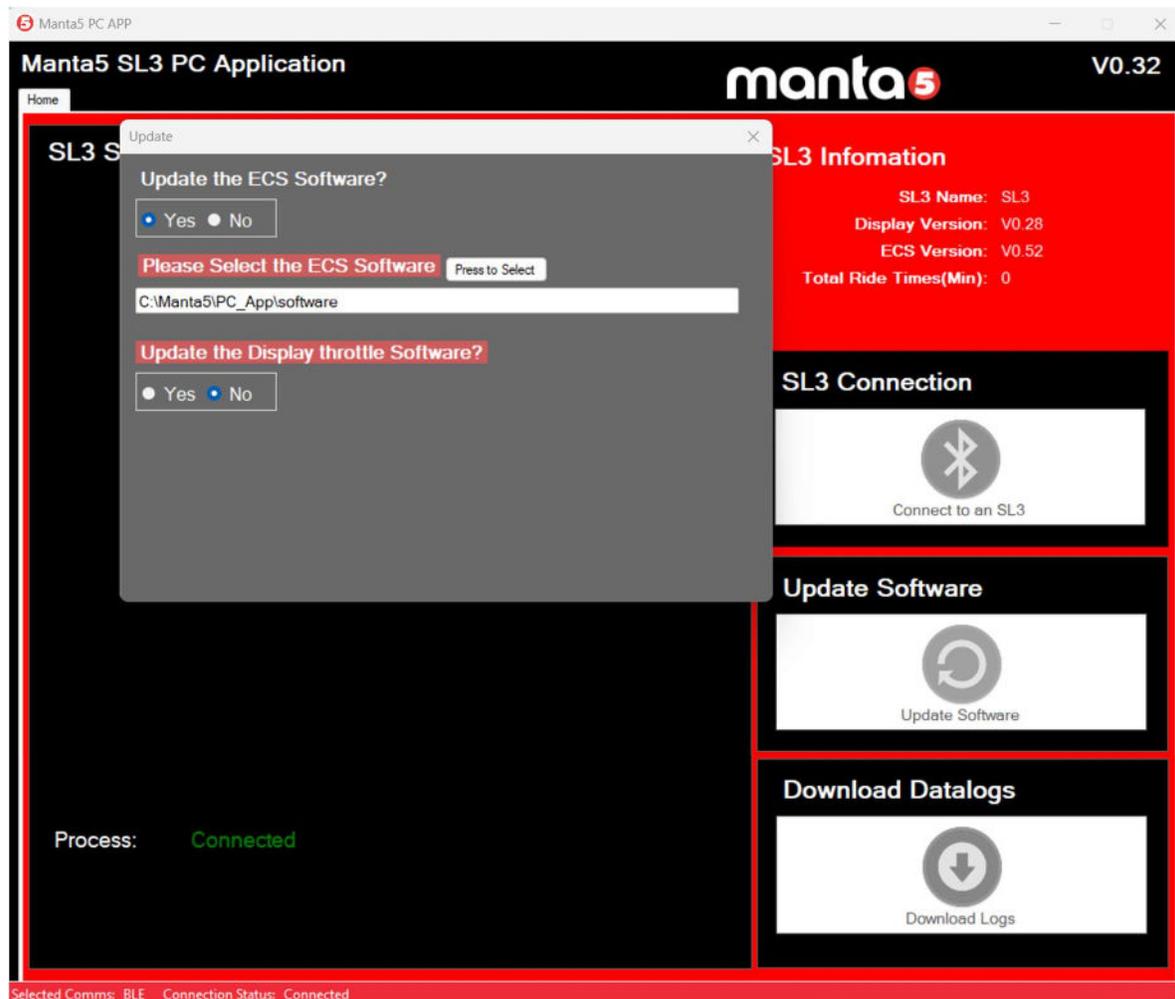
Upgrade ECS Bootloader

This process IS NOT required if the ECS bootloader is already version V1.00 or higher. Please go to Upgrade ECS Application.

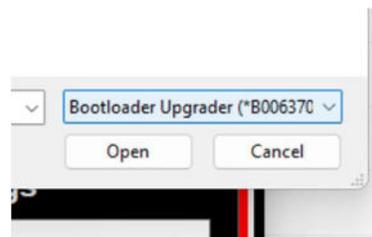
This process will erase the current ECS application software and upgrade the ECS bootloader software.

To start the upgrade, click the "Update Software" button.

Click 'Yes' for Update the ECS software and click "Press to Select".



Change the filename filter to "Bootloader Upgrader" and select the software file [ECS-B006370B-V105.bin](#). Click "Open".



Click the "Confirm" button and the "Yes" button to start the upgrade.

The progress bar will start to turn green.

The Hydrofoiler SL3 LCD will display "UPL".



* The Bluetooth icon may not show in some older versions of the software.

When the upgrade has finished the SL3 PC App attempts to read the application software version number, however this will fail because the ECS only contains the bootloader code.

The SL3 PC App will show,



Read Info fail, Please try re-Update related software.

This message can be ignored.

The Hydrofoiler SL3 LCD will display "E10". This can also be ignored.



Now go to Upgrade ECS Application.

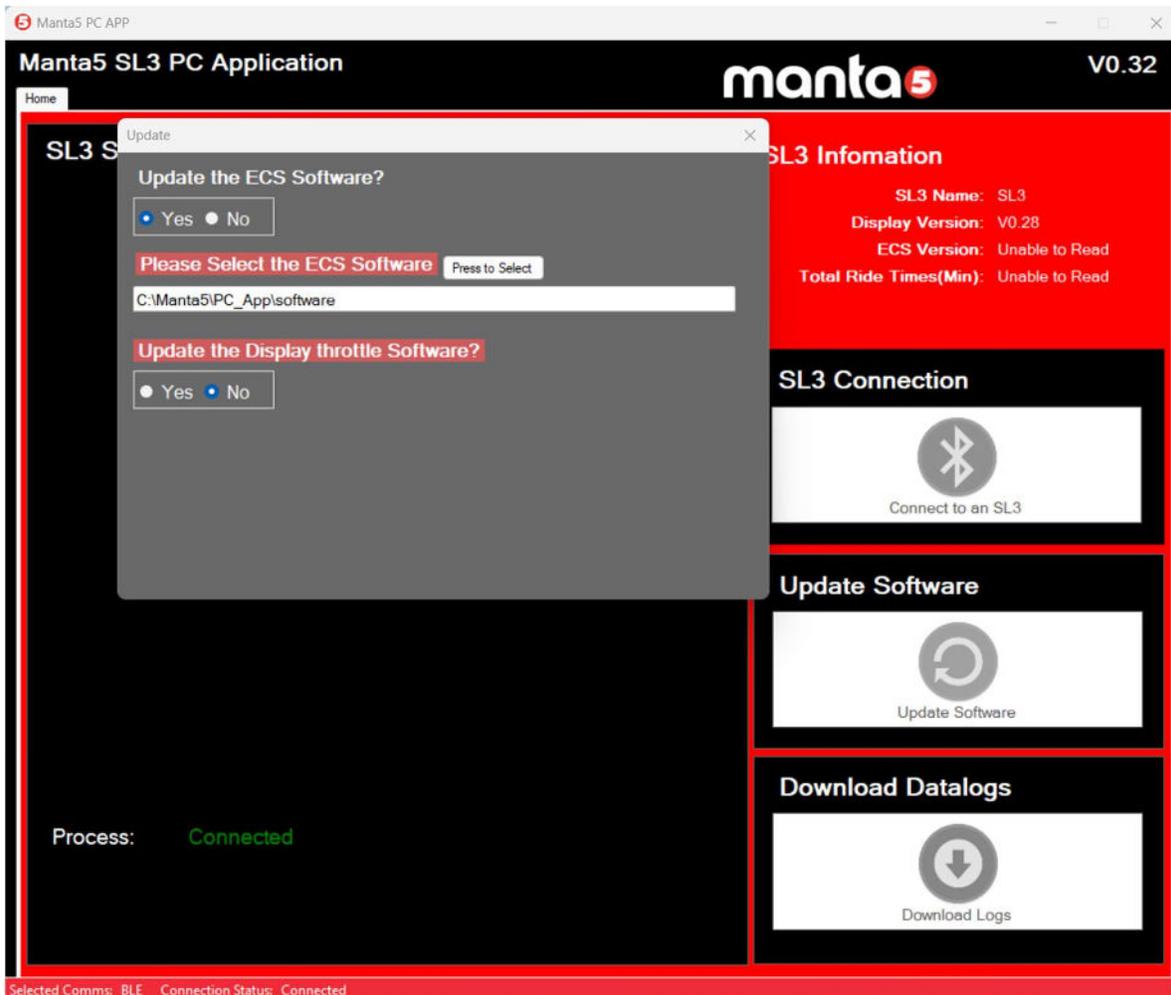
Upgrade ECS Application

DO NOT start this process unless the ECS bootloader version is already V1.00 or higher.

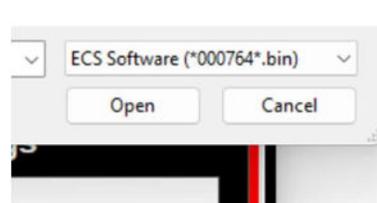
This process will upgrade the ECS application software.

To start the upgrade, click the "Update Software" button.

Click 'Yes' for Update the ECS software and click "Press to Select".



Change the filename filter to "ECS Software" and select the software file [ECS-A000764-V73\[S\].bin](#). Click "Open".



Click the "Confirm" button and the "Yes" button to start the upgrade.

The progress bar will start to turn green.

The Hydrofoiler SL3 LCD will display "UPL".



When the upgrade has finished The SL3 PC App will show **Finish Reading SL3 Info.**

The SL3 Information panel will show,



After 2 or 3 seconds, the Hydrofoiler SL3 LCD will display "OFF".



ECS upgrade is now complete. Now go to Upgrade Display-Throttle Bootloader.

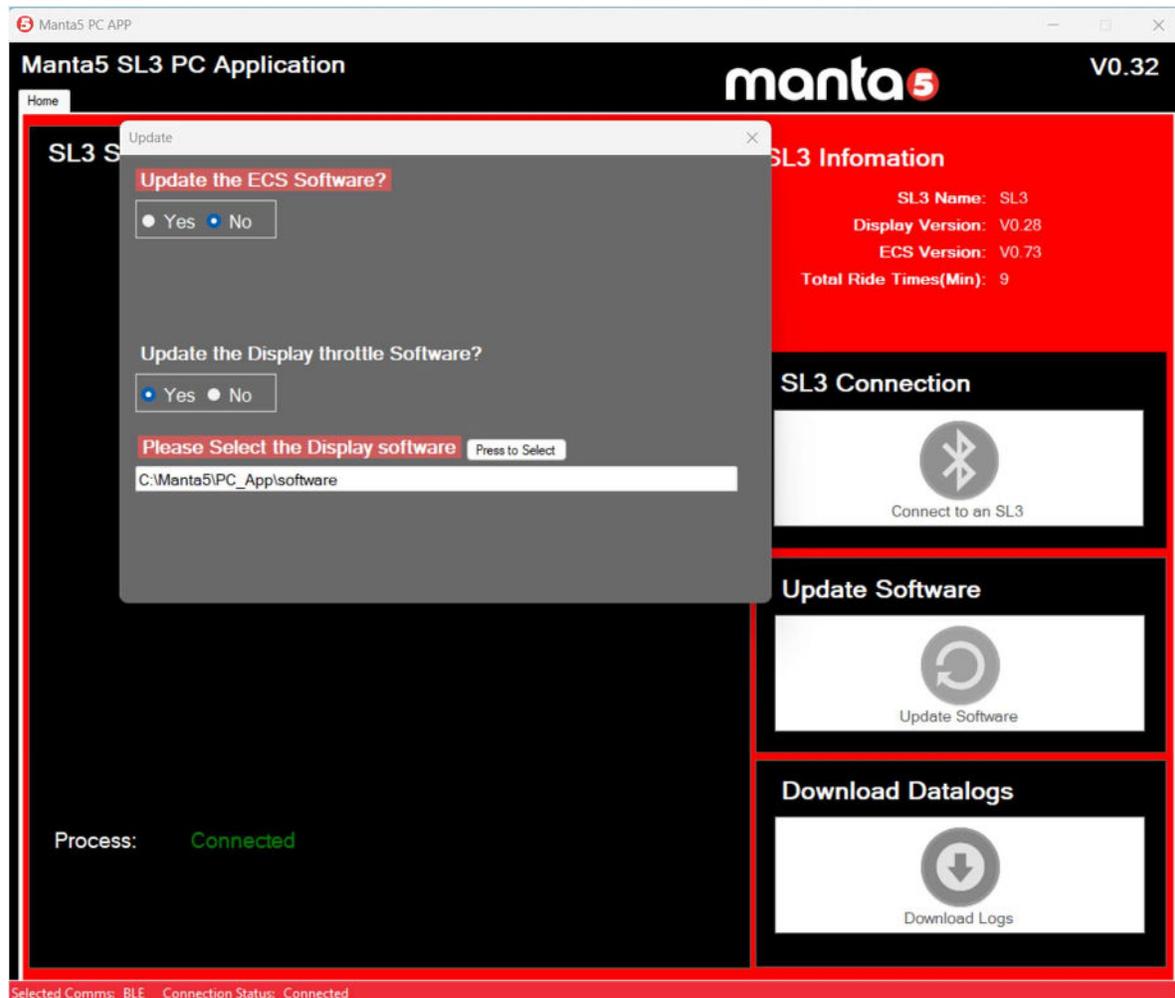
Upgrade Display-Throttle Bootloader

This process IS NOT required if the Display-Throttle bootloader is already version V1.00 or higher. Please go to [Upgrade Display-Throttle Application](#).

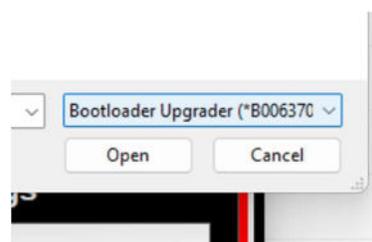
This process will erase the Display-Throttle application software and upgrade the Display-Throttle bootloader software.

To start the upgrade, click the "Update Software" button.

Click 'Yes' for Update the Display-Throttle software and click "Press to Select".



Change the filename filter to "Bootloader Upgrader" and select the software file [Display-B006370D-V105.bin](#). Click "Open".



Click the "Confirm" button and the "Yes" button to start the upgrade.

The progress bar will start to turn green.

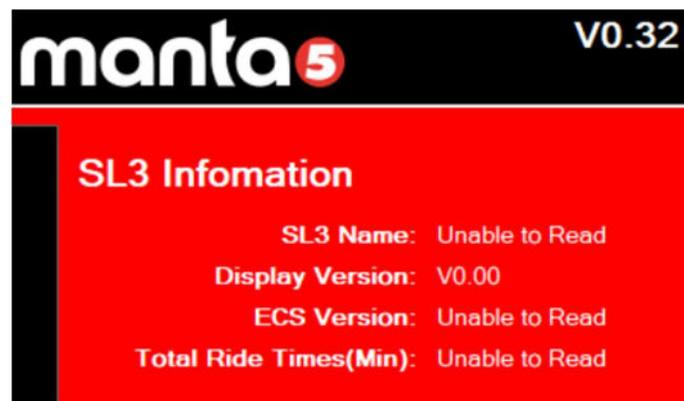
The Hydrofoiler SL3 display will show "BTL".



* In some older versions the screen may go blank

When the upgrade has finished the SL3 PC App attempts to read the application software version number, however this will fail because the Display-Throttle only contains the bootloader code.

The SL3 PC App will show,



Read Info fail, Please try re-Update related software.

This message can be ignored.

The Hydrofoiler SL3 LCD will continue to display "BTL".



Now go to Upgrade Display-Throttle Application.

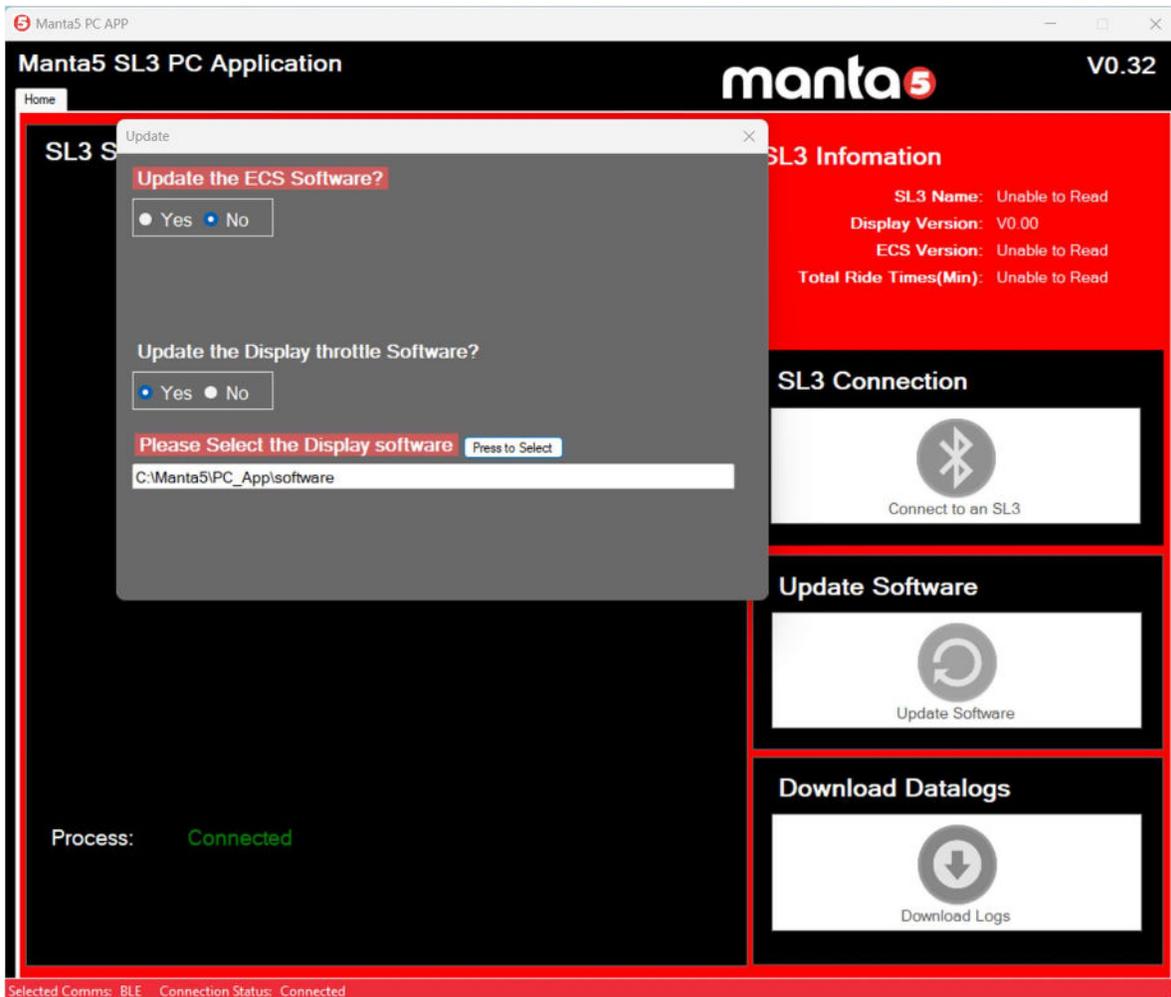
Upgrade Display-Throttle Application

DO NOT start this process unless the Display bootloader version is V1.05.

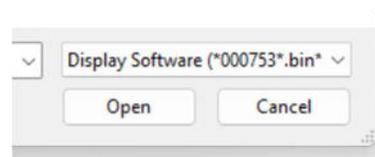
This process will upgrade the Display-Throttle application software.

To start the upgrade, click the "Update Software" button.

Click 'Yes' for Update the Display-Throttle software and click "Press to Select".



Change the filename filter to "Bootloader Upgrader" and select the software file [Display-A000753-V3 1\[S\].bin](#). Click "Open".

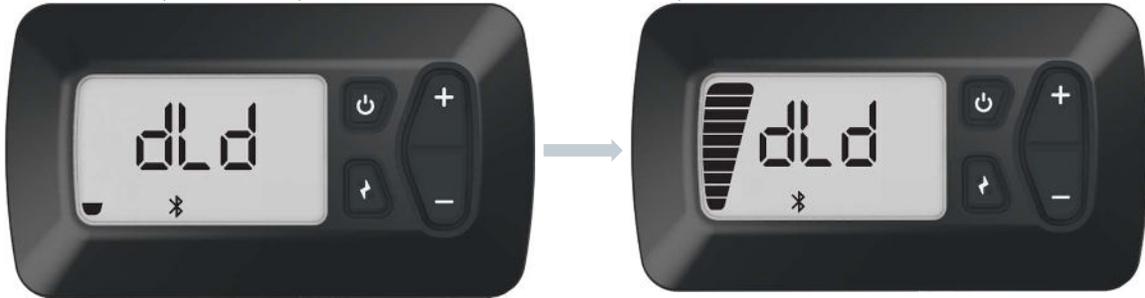


Click the "Confirm" button and the "Yes" button to start the upgrade.

The progress bar will start to turn green.

The Hydrofoiler SL3 display will change from "btl" and will show "dLd".

The bars on the left-hand side of the LCD will increase as the download proceeds.



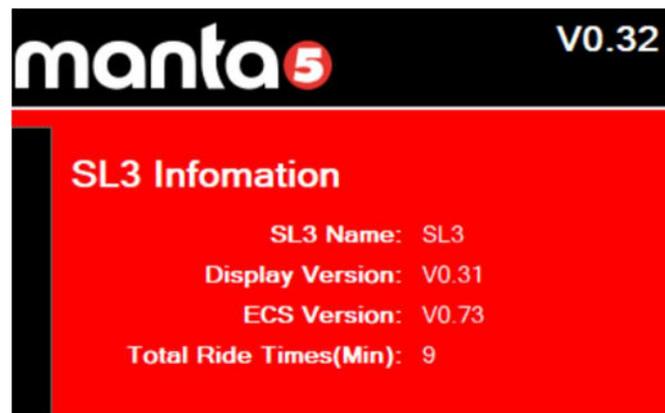
At the end of the software upgrade the LCD will show "Pro" and then show "CAL".



When the upgrade has finished The SL3 PC App will show **Finish Reading SL3 Info.**

The SL3 Information panel will show,

The SL3 PC App will show,



Now go to Recalibrate Display-Throttle.

Recalibrate Display-Throttle

Due to the nature of this major upgrade, the Display-Throttle unit will require a re-calibration. Please follow the simple instructions in this document [001529 - Hydrofoiler SL3 Display-Throttle Calibration.pdf](#).

The Display-Throttle LCD should now display "OFF".

The process is now complete and your Hydrofoiler SL3 will have the latest available software.

Module	Version
Bike Controller (ECS)	V1.05
	V0.73
Ride controller (Display)	V1.05
	V0.31

Revision History

Date	Version	Author	Change Notes
25/10/2023	1	Pete Ruddock	Initial
31/10/2023	1.1	Pete Ruddock	Added note regarding V0.33 of SL3 PC app. Added warning to upgrade code exactly in the correct order.