Victory Software
User Manual

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Victory Programming Software
User Manual

Welcome to the world of computer-based Electronic Speed Controls! The Victory Programming Software will allow you to configure your ESC to match your radio, battery pack and motor to a level of detail never before available in *any* ESC. At the same time, it can be configure your control with only a few button clicks for the average user.

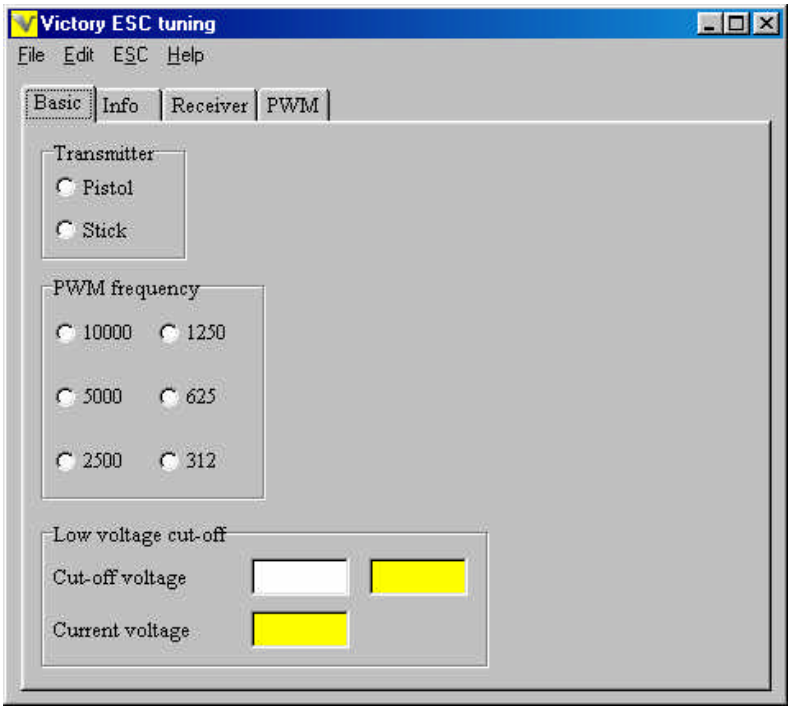
Installation:

The Victory software comes on CD-ROM, or you may download the latest version off the RC-Hydros.com website on the Internet. Assuming the CD-ROM version, simply insert the CD-ROM into your computer's CD reader. Using the file exploring facility of your version of Windows, copy the software to the desktop of your machine.

Operation:

For safety, we strongly recommend removing your ESC from the boat. At the very least it is essential to remove the prop if you cannot remove the ESC from the boat. Just think about what could happen with a glitch – it will probably destroy the table top, or your finger (or someone else's), and certainly the prop.

Once you are working safely, you may power up the transmitter and receiver. If you have a BEC ESC, you will be powering up the receiver as soon as the battery is attached.



Attach the Victory Programming Cable to the ESC and to your PC. **NOTE:** *The cable is NOT a USB cable! Plugging the ESC into a USB cable could damage both the ESC and the PC!*

Open the Victory program by double-clicking the desktop icon or from the Start menu. When you do, you will be presented with the opening screen shown in Figure 1. The program does not know which port to use to speak to the ESC, so you will need to tell it that first. It will default to COM1. In following sessions you will not need to set this again as the computer will remember which port you selected. The communication port setting is found on the Options page of the ESC pull-down menu on the Com setting option. Simply change the "1" digit to the appropriate number for your system. Note that USB-to-RS-232 adapters may give unusual numbers. Use the Device Manager (Start | Settings | Control Panel | System) to find the name of a USB-to-RS-232 adapter.

Reading ESC Status:

Select the pull-down option ESC | Read Configuration to have the program read the current identity and status of the ESC. This will give you some information regarding the type of ESC you have, its serial number and date of manufacture, as well as the firmware version. If you encounter any problems with your ESC, this information should be sent to RC-Hydros.com for technical support.

After a few seconds of reading, the software will fill in the already-programmed options. In some cases, ESCs were shipped with configurations slightly different than the PC software will recognize. This is normal, and simply reflects the ongoing effort we have made to find the best settings for each option. It is recommended that you select one of the standard options in each of the boxes on the Basic tab in order to benefit from the identification of these well-tested standard setups.

Making Adjustments:

To change the ESC between pistol or stick radio, to change the PWM frequency, or adjust the Low-Voltage Cutoff (LVC) simply click on the selection on the Basic tab for each of these features.

To make your selections, click on the radio button in each box. To change the Low Voltage Cutoff (LVC) click in the white window next to "Cut-off voltage." All our ESCs default to 0.0V (no cutoff) because the vast majority of our customers use NiMH cells. When you type a value into the white field, the adjacent yellow field will display a close but most-likely different value. The yellow value is the actual value that the ESC will use. It differs slightly because of how math is done in a computer. The difference is insignificant – just type in what you want.

A setting of 0V will allow the ESC to fully discharge the battery pack (at least, as far as it would continue to operate). For racing conditions with NiCd or NiMH packs, this is a safe setting as it will allow you to finish the heat. For sport running, it is recommended that you put in a value no lower than 0.8V per cell. For Lithium batteries of any sort, it is imperative that you use a setting recommended by your battery pack manufacturer. This is usually about 3.4V per cell in series.

When the LVC is enabled, the ESC will reduce throttle automatically as you hit that voltage in an attempt to keep from going below the LVC setting. This will allow you to limp home as much as possible without causing damage to your batteries. When the ESC shuts off the voltage, allow it to rest several seconds, then *gently* pull the throttle to continue limping. This will work until the battery voltage drops below LVC even at rest.

None of your changes will actually be sent to the ESC until you select the Write Configuration selection on the ESC pull-down. It will take a few seconds for the PC to write all the changes to the ESC. When it finishes, cycle power on the ESC to activate your changes.

Saving the ESC Configuration File:

If you would like to save this configuration for future reference, you may use the Save or Save As options on the file menu. If you get into an advanced configuration which doesn't quite work right, you can e-mail the file to us for help and evaluation.

Also on the ESC pull-down menu are two checkboxes named Update Voltage and Update Pulse. To see the voltage being sensed by the ESC at any time, select Update Voltage. About once a second the PC will ask the ESC what voltage it sees. It is OK for this to vary a little, or to blink "error". The ESC is rather busy and cannot answer the PC's requests all the time, so the PC lets you know this by the answer in the Current Voltage box.

If the voltage there is very different from what it should be (for instance, it is about half) then your ESC needs to be returned to us. A calibration error was made at some point and we need to work on it here to correct that. There were a handful of early ESCs shipped inadvertently having a bad LVC calibration value.

The Update Pulse option, when checked, allows you to monitor the pulses the ESC is receiving from the transmitter on the Receiver tab. It will jitter a little – this is normal also.

Info Tab

Clicking on the "Info" tab will give you detailed information about your ESC. If your ESC shows data which doesn't make sense in these fields, do not worry – they are information only. If you would like us to correct them, you must send your ESC in.

ADVANCED:

The Receiver and PWM screens allow experienced, knowledgeable users to directly edit the many parameters of the configuration. These options exist to allow Tech Support to help with custom configurations that may be needed in very rare instances. Making changes without Tech Support direction may make your ESC not perform reliably, but it will always be able to communicate. There is a Factory Defaults option on the ESC menu to recover when you get things too confused – ***be careful, though, since Factory Defaults will also reset the calibration of your ESC, and it must then be returned to us to set again!***

A complete discussion of each of these fields will eventually be included in this manual. It is considered beyond the scope of what 99.9% of our users will ever need. Those few who truly understand and know how to use these fields will help us with the explanations.