

SBL-Micro PC-Setup

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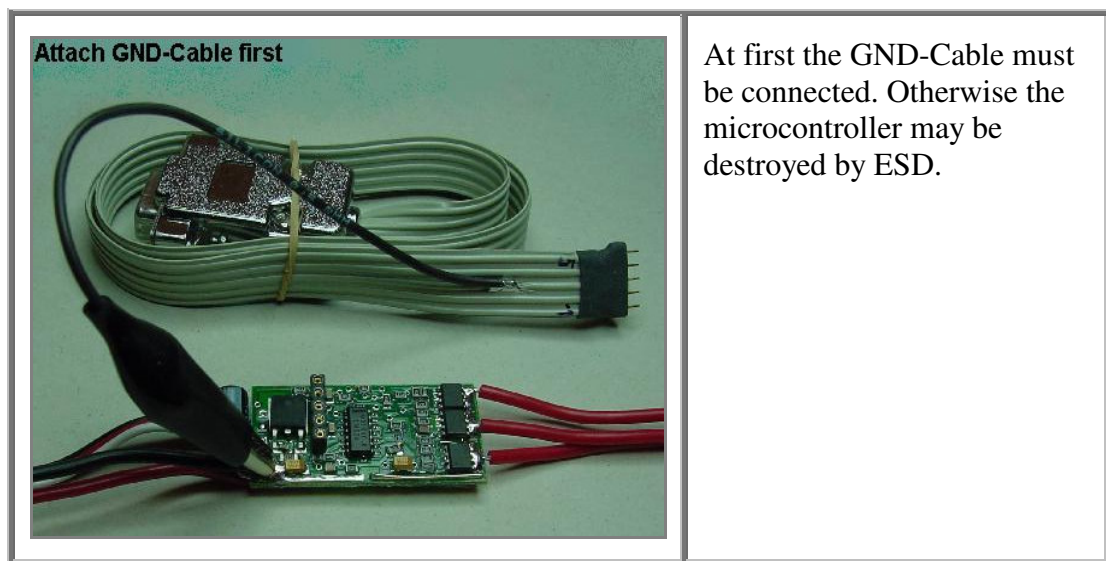
Preface

PC Setup Procedure (RC Setup is optional):

As a first step one should "ground oneself" at the PC back, in order to prevent a destruction of electrical units by electrostatic discharge. It is particularly important during the winter season.

It's very important to do all steps in a correct sequence:

1. Download the latest zip files and unzip in the same folder containing the program
2. start "SBL-Micro-PC-Setup" and choose COM-Port
3. connect the GND-cable as shown
4. connect the setup cable with the SBL-Micro (without motor)
5. connect the setup cable with the PC
6. connect the power supply
7. setup or update the controller
8. disconnect the power supply
9. disconnect the PC
10. remove the GND-cable and then the setup-cable from the SBL-Micro
11. RC Setup complete (otherwise periodic beeps)



Menu

File

With this function a software update can be done. You will however need a compatible UPD file. If the CONTROLLER has for example version V1001-0e, then z. B. "V1001-1002.upd" or "V1001-1003.upd" will be compatible.

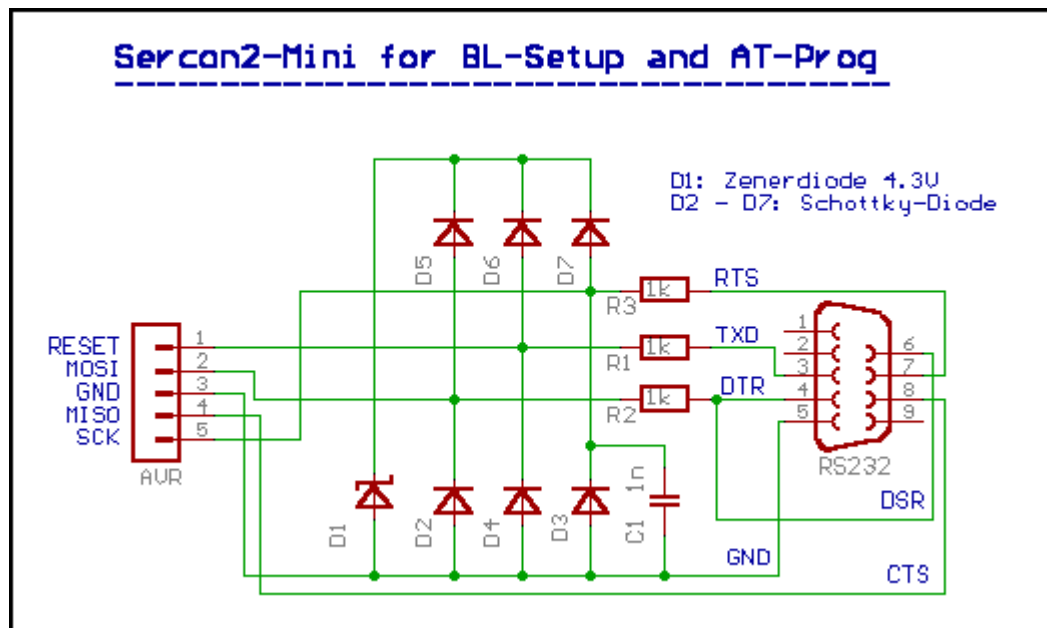
Not however z. B. "V1002-1003.upd".

Port

Selection of the computer COM port

Serial interface COM1... COM8

To program through the COM port, a special adapter is necessary (Sercon2-Mini).



Model Memory

Model memory 1 read

Model memory 2 read

Model memory 1 write

Model memory 2 write

In the two storage areas the following data can be saved by PC Setup:

- Undervoltage setting *
- Overtemperature protection *
- Motor Block Protection *
- Maximum RPM
- Starting power
- Brake strength **
- Commutation timing

The activation of the first model memory is accomplished, when after a desired RC Setup the battery is removed only after waiting more than 10 sec after the save setting beep tone. This is acknowledged with a single beep.

If the battery remains connected after this tone for a further 5 sec., the second model memory is taken over acknowledged with a double beep.

* With ESC in Mode4 (helicopter mode) these features are not taken over.

** The desired brake strength value is taken over when ESC is in Mode2 (glider mode) only.

Option

Lock Functions

Lock RC-Setup

Enabling this option, one can avoid the ESC entering the RC setup if the power is applied inadvertently with full throttle.

Lock Test programm

With some PCs, while during PC Setup with an attached motor, there exists a danger that the internal test routine (output stage test) is activated.

If one would like to make PC Setups, without detaching the motor, this option should be activated.

Calibrate RC-Oscillator

This function is not needed normally, only if the data memory is lost out of some reason.

Controller Info

Read Device ID and Fuse bits.

Help

Internet Service Site <http://jaichi.virtualave.net/sbl-micro.htm>

The technical support site for the SBL Micro is periodically updated. Here current data and Downloads can be found.

Dialog fields

Low voltage Protection

On activation of the Low voltage Protection by checking "reduce power" or "switch off" boxes, one may specify 2 possible types of cut off thresholds:

1. 0.8V/Cell with Nicad or Nimh cells.
2. fixed values between 5.3V and 10.5V.

Lipoly cells should not be discharged to less than 3.2V.

With 3 Lipoly cells in series a fixed value of approx.. 9.6 V would be OK.

With reduced power, the throttle stick position is limited to a maximum compatible value.

If this delimitation reaches a value of 50%, the motor is turned off. After "Throttle-off-on" a restart is possible.

As soon as the performance is in a steady range, every few sec. the power is taken off briefly, in order to indicate "undervoltage" to the pilot.

Signal tolerance

small: after approx.. 1 sec. without valid signals the motor is turned off, a restart is only possible after "Low Throttle".

medium: after approx.. 3 sec. without valid signals the motor is turned off, a restart is only possible after "Low Throttle".

High: after approx.. 5 sec. without valid signals the motor is turned off, but restarts as soon as there is a valid signal from the receiver.

These settings function at present only for Receivers with proper noise suppression.

Over temperature protection

On reaching a certain unsafe temperature the motor is shut down, a restart is only possible after "Throttle-off-on".

With Helis the over temperature protection shouldn' t be activated.

Block Motor Protection

With an extensively large power input the motor is turned off, a restart is only possible after "Throttle-off-on".

With Helis the block protection shouldn' t be activated, since it may switch on with high power input without being able to stop the motor.

Forward-reverse

Functions only, if a neutral zone was programmed (see description of RC setup, Car Mode). The SBL Micro is not suitable for Cars, I wanted this function however not to be deactivated.

Control speed

The smaller the value, the softer the starting.

Starting power

With unusual Motor configurations (small size, high speed) this enables efficient running/starting.

Commutation Timing

Besides "auto" one can also set fixed values in 7.5° steps.

Generally speaking, the larger the load and speed, the more "timing advance" is necessary.

Normally it will be ok with the "auto" setting. If one is using a 2 - Pole Motor (slow commutating) and still wants maximum power, try setting a fixed value of 22.5° or 30°.

RPM Control

With the RC Setup in Mode4(heli mode), check the "active PRM control" box and the first run following it is automatically an initial run. The ESC needs to know maximum RPM under load. This information is gathered during this first initial run. The ESC now knows the maximum RPM and will save this setting (see description of RC setup).

When reading the values in the PC Setup program this will be shown as max. RPM for a 2-Pole-Motor. This is the electronic RPM, thus that number of revolutions that the ESC "reads".

It is possible in the PC Setup to specify the desired maximum RPM again.

For a 2-Pole Motor, elec. RPM and motor RPM are same.

With Helis the Motor Block Protection should not be activated, to avoid hard regulation and no motor stop.

RPM Control is not fully tested yet! Program upgrades are being made, available through Download site.

The screenshot shows a software window titled "RPM-Control". It contains several input fields and buttons. On the left, under "Max. Values", there are four input fields with values 1323, 79380, 15876, and 15876, corresponding to "elec. freq. motorphase, Hz", "elec. freq. motorphase, RPM", "motor-RPM", and "desired rotorespeed, RPM" respectively. A "Calculate" button is below these fields. On the right, under "Motor-Gearbox", there are two input fields: "number of poles" with value 10 and "gearbox ratio 1:" with value 1.00. A "Save Input" button is below these. Further down, under "Controller", there are "Read" and "Write" buttons. At the bottom right is a "Done" button. At the bottom left, there is a list of instructions: 1. set values Motor-Gearbox, 2. click "Read", 3. type in desired rotorespeed, 4. "calculate", 5. "write".

Read/Write

The current operational data in the memory is read or desired values are written (this is in addition to two model memories, which can only be activated with the optional RC Setup).

I am endeavored to offer an error free program. It is possible nevertheless that by different configurations problems emerge. In this case please send a short email to jaichi@gmx.net

Non-liability:

I do not take over any adhesion for damage by installation or use of hard or software developed.

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