ROTORAMA

USB linker programmer

USB programmer for speed controllers (ESC)
for BLHeli_S and BLHeli_32



Read this manual carefully before use and keep it for future reference.

www.rotorama.com

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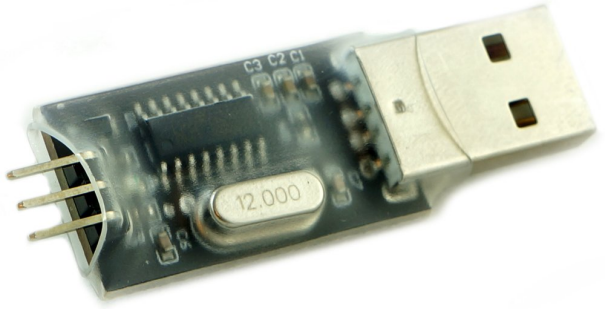
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1. Product description

1.1 What it is for

The USB linker programmer is a USB programmer for setting up electronic speed controllers (ESC) with **BLHeli_S** and **BLHeli_32** firmware directly from a computer. The ESC is connected to the programmer with its standard servo connector (signal cable), the programmer is plugged into a USB port of the computer and the ESC is configured in the BLHeliSuite configuration software.

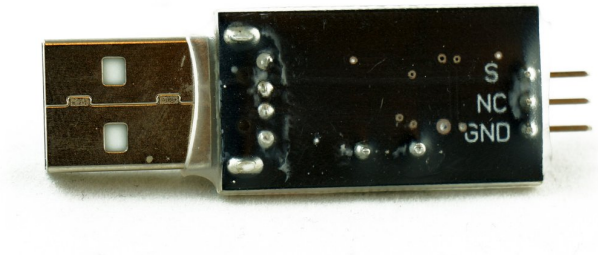
This lets you set up the ESC even **without a flight controller (FC)**. The programmer is therefore particularly suitable for pilots of flying wings and model airplanes, where the ESC is not connected to a flight controller running Betaflight and setup through it (so-called passthrough) is not possible.



USB linker programmer – pin header for the ESC servo connector on the left, USB-A connector on the right

1.2 Technical data and package contents

Product designation	USB linker programmer
Purpose	setting up ESCs with BLHeli_S and BLHeli_32 firmware from a computer
Computer connection	USB-A connector (plugs directly into a USB port)
ESC connection	3-pin header for a servo connector, pins **S** – **NC** – **GND**
Configuration software	BLHeliSuite (BLHeliSuite32 for BLHeli_32), USB/Com interface
Package contents	1× programmer
Not included	ESC, battery, USB extension cable, configuration software (free download)



Underside of the programmer with pin labels S (signal), NC (not connected) and GND (ground)

S – signal; connect the ESC signal wire (usually white, yellow or orange).

NC – not connected; the middle wire of the servo connector (usually red) is not connected to anything here.

GND – ground; connect the ESC ground wire (usually black or brown).

2. Use

2.1 Safety when working with the ESC

During programming the ESC is powered from a battery. If a motor is connected to the ESC, always remove the propeller first.

- Work on a dry, non-conductive surface, out of the reach of children.
- Observe the correct polarity of the servo connector – the ESC ground (GND) must be on the GND pin of the programmer.
- If possible, power the ESC during programming through a current-limited supply (bench power supply, fuse or resistor in series with the battery). If flashing the firmware fails, the current limit protects the ESC from being destroyed.
- Do not disconnect the battery or the programmer while firmware is being flashed.
- Do not touch the bare contacts and the board of the programmer with metal objects and protect it from moisture.

2.2 What else you need

- a computer with a free USB-A port,
- the **BLHeliSuite** configuration software (BLHeli_S ESCs) or **BLHeliSuite32** (BLHeli_32 ESCs); download links are in the official BLHeli project repository: github.com/bitdump/BLHeli,
- a battery suitable for your ESC (or a current-limited power supply),
- an ESC with BLHeli_S or BLHeli_32 firmware and a servo connector on the signal cable.

2.3 Connecting the ESC

① Plug the ESC servo connector onto the pin header of the programmer so that the signal wire is on pin **S** and the ground wire on pin **GND**.

② Plug the programmer into a USB port of the computer. The computer recognises it as a serial port (COM).

③ Start BLHeliSuite (BLHeliSuite32 for BLHeli_32).

④ Only now connect the battery to the ESC.

※ The programmer does not power the ESC – power must always be supplied by a battery or power supply connected to the ESC.

2.4 Setup in BLHeliSuite

① In the software, select the interface labelled **USB/Com** (BLHeli bootloader via serial port).

② In the port list, select the COM port the system has assigned to the programmer. The port number differs from computer to computer.

③ Click *Connect* and then *Read Setup* – the software reads the current ESC settings.

④ Change the required parameters and save them with the *Write Setup* button. New firmware can be flashed the same way (*Flash BLHeli*).

⑤ Click *Disconnect*, disconnect the battery and only then the programmer.

A description of the individual ESC parameters can be found in the official BLHeli_S and BLHeli_32 firmware manuals linked from the github.com/bitdump/BLHeli repository.

2.5 Troubleshooting

Problem	Possible cause and solution
No new COM port appears in the software	The system does not have a driver for the programmer's USB-UART converter. Install the driver (in Windows via Device Manager) or try a different USB port.
The software does not connect to the ESC	Check the polarity of the servo connector (S and GND), the selected USB/Com interface and the COM port. Make sure the ESC is powered from the battery. Disconnect the battery, reconnect it and try *Connect* again.
The ESC does not respond even when correctly connected	The ESC firmware may not support the bootloader via the signal wire (e.g. ESCs with firmware other than BLHeli_S / BLHeli_32). Check the firmware with the ESC manufacturer.
Firmware flashing was interrupted	Leave the programmer connected to the computer, reconnect the battery and repeat the flashing. This is why powering the ESC through a current-limited supply is recommended.

※ Use the product in accordance with the regulations of the country in which you operate it. The law of that country is decisive.

3. Information for the EU and Czech Market

3.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorama.cz
Phone	+420 252 252 098
Website	www.rotorama.com

3.2 Disposal of electrical equipment



- The crossed-out wheeled bin symbol on the product, its packaging or in the documentation means that at the end of its service life the product **must not be disposed of together with mixed municipal waste**.
- Hand it over at a take-back point for electrical equipment – at a collection yard, at a take-back point of a collective system, or at the retailer when purchasing a new equivalent product. Take-back is free of charge for the end user.
- The obligations under Act No. 542/2020 Coll., on end-of-life products, are fulfilled by the importer through a collective take-back system.
- Proper disposal helps prevent negative impacts on the environment and human health and contributes to the reuse of secondary raw materials.

Through its contractual partner **ASEKOL a.s.**, the company ensures the take-back of waste electrical equipment from households and the separate collection of waste electrical equipment, batteries and accumulators in accordance with the applicable legislation. The customer is entitled to hand over old electrical equipment or a battery or accumulator at any collection point of the above contractual partner. The addresses of these take-back points are listed at www.asekol.cz, www.ecobat.cz and also https://visoh2.mzp.cz/RegistrMistZO/RegistrMistZOPublic/MapaMistZpetOdberu.

4. Warranty and rights arising from defective performance

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 3.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Štěpánská 796/44, 110 00 Prague 1, www.coi.cz.