VIFLY ToothStor

Four-channel charger for 2S Li-Po / LiHV batteries
BT3.0 & JST-XH2.54 version



Read the entire manual before use, especially the safety instructions in Chapter 1. Never leave batteries being charged unattended.

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1. Safety instructions

Read this entire manual carefully before first use and keep it for future reference. If you pass the product on to another person, include this manual.

1.1 General rules

- The product may only be operated by persons **aged 14 and over**. Children must not operate the charger.
- **Never leave** the charger or the batteries being charged **unattended**.
- Only use a power supply whose voltage and power match the technical data (Chapter 2.5).
- Keep your hands dry when connecting or disconnecting the power supply.
- Protect the device from humidity and high temperatures – it heats up during operation.
- Do not expose the charger to direct sunlight and keep it at a sufficient distance from heat sources.
- Do not cover the top or bottom of the device and ensure good ventilation; do not cover the fan or the vents.
- Do not let any liquid or metal particles get into the device. Protect it from falls and impacts.
- After disconnecting the power supply, disconnect all batteries without undue delay.
- Place the charger on a firm, level and non-flammable surface, away from flammable objects.

Never connect two batteries to one channel at the same time – each channel has two connectors (BT3.0 and JST-XH2.54), but you may only ever use one of them.

1.2 Li-Po and LiHV batteries

- The charger is designed **exclusively for two-cell (2S) Li-Po and LiHV batteries**. Do not connect other battery types or cell counts.
- Check the selected target voltage before starting to charge. **Never charge a Li-Po battery to 4.35 V/cell** – this value is for LiHV only.
- Select the charge current according to the battery manufacturer's specifications. If in doubt, do not exceed a current of 1C (e.g. 0.5 A for a 500 mAh battery).
- Do not charge a battery that is damaged, swollen, deformed or has damaged leads or a damaged connector.
- Do not charge a battery immediately after a flight while it is still warm – let it cool down to ambient temperature.

- Charge in a fireproof bag or container, away from flammable materials.
- If a battery heats up, swells, smells or emits smoke during charging, disconnect the power supply immediately and move the battery to a safe place on a non-flammable surface.
- Bring batteries that you will not use for several days to storage voltage (Chapter 5.3).

1.3 Regulations in the country of use

The legal information in Chapters 8 and 9 describes the situation in the Czech Republic. Regulations on the disposal of electrical equipment and on consumer rights differ between the Member States of the European Union. If you use the product in another country, **follow the regulations of the country in which you operate it**.

2. Product description

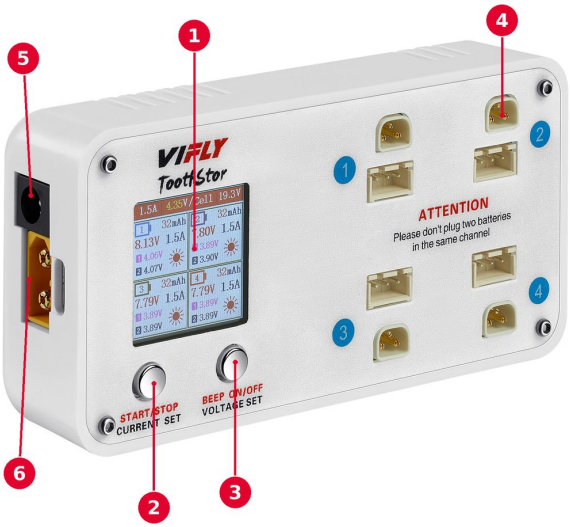
VIFLY ToothStor is a four-channel charger and discharger for two-cell Li-Po and LiHV batteries with a storage function. The four channels are independent of each other, so batteries with different voltages and capacities can be charged at the same time. The battery is connected via the balance connector only or via the BT3.0 connector – the main power lead (XT30 etc.) is not connected. In addition to full charging, the charger can charge or discharge a battery to storage voltage.

2.1 Package contents

- VIFLY ToothStor charger (BT3.0 & JST-XH2.54 version)
- USB-C cable
- Printed manufacturer's manual

※ A mains adapter is not included.

2.2 Parts



VIFLY ToothStor charger (BT3.0 & JST-XH2.54)

① Colour LCD display – see Chapter 3

② Button 1 **START/STOP · CURRENT SET** – start and stop, charge current setting

③ Button 2 **BEEP ON/OFF · VOLTAGE SET** – target voltage setting, buzzer

④ Output ports of channels 1–4 – each channel has a BT3.0 and a JST-XH2.54 connector

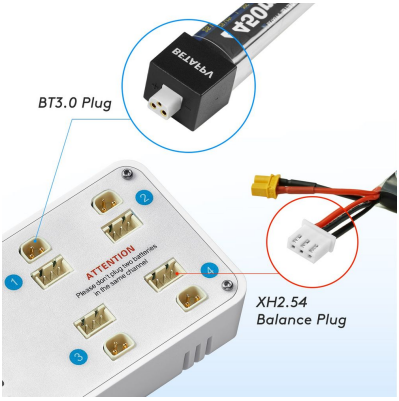
⑤ DC power input 5.5 × 2.1 mm

⑥ XT60 power input

There is also a USB-C input on the side of the device (Chapter 4.1) and a cooling fan on the right-hand side.

2.3 Output ports

Each of the four channels has two connectors: **BT3.0** and the **JST-XH2.54** balance connector (3 pins). Connect the battery to one of them. Both connectors of a channel belong to the same charging circuit – **never connect two batteries to one channel**.



BT3.0 connector and JST-XH2.54 balance connector

2.4 Manufacturer

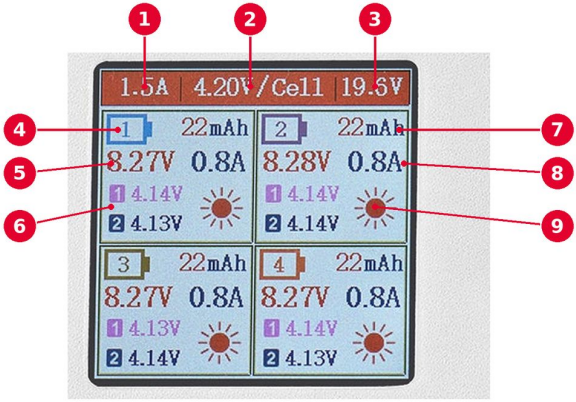
Manufacturer	HONG KONG STAR ARK SMART NET TECHNOLOGY LIMITED (VIFLY brand)
Address	Unit 98 of Factory A 1/F, Union Hing Yip Factory Building, No. 20 Hing Yip Street, Kwun Tong, Hong Kong
E-mail	support@viflydrone.com
Web	viflydrone.com

2.5 Technical data

Parameter	Value
Number of channels	4, independent
Battery type	Li-Po / LiHV, 2S
Battery connector	BT3.0 and JST-XH2.54 (3-pin balance connector)
Input connectors	XT60, DC 5.5 × 2.1 mm, USB-C (PD 3.0)
Input voltage XT60 and DC	10–26 V (XT60: 3S–6S battery)
Input voltage USB-C	12–20 V
Minimum power supply rating	65 W
Charge current	adjustable, max. 1.5 A per channel
Discharge current	max. 0.2 A per channel (not adjustable)
Discharge power	max. 0.95 W per channel
Balance current	0.2 A
Target voltages	3.80 / 3.85 / 4.20 / 4.35 V/cell
Storage voltage accuracy	±0.05 V/cell
Dimensions	109 × 56 × 30 mm
Weight	142 g

3. Display and controls

3.1 Display



Display during charging

① Set charge current (common to all channels)
② Set target voltage per cell
③ Input supply voltage
④ Channel number
⑤ Battery voltage
⑥ Voltage of cell 1 and cell 2
⑦ Charged capacity (mAh)
⑧ Real-time charge current
⑨ Channel status symbol

3.2 Status symbols

Symbol (sun)	Meaning
red	channel is charging
yellow	channel is discharging
green	charging or storage charging finished – disconnect the battery in time

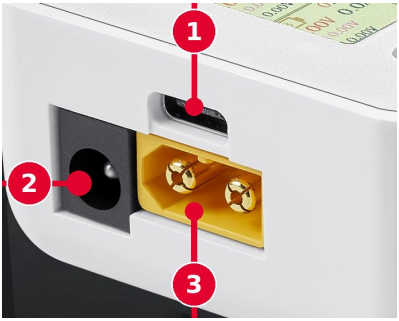
3.3 Control buttons

Button	Short press	Long press
② START/STOP CURRENT SET	change charge current	start / stop charging
③ BEEP ON/OFF VOLTAGE SET	change target voltage	buzzer on / off

- Only the **maximum charge current** can be set. The discharge current cannot be set and does not exceed 0.2 A.
- The charger remembers the last settings used, so you do not need to enter them again after switching on.
- When a charging cycle is finished, the charger beeps. If you do not want the acoustic signal, switch the buzzer off with a long press of button ③.

4. Power supply

The charger has no built-in mains power supply. It can be powered via one of three inputs; always use only one input at a time. Only use a power supply with CE marking and safety extra-low voltage (SELV).



① USB-C · ② DC · ③ XT60

4.1 USB-C with PD protocol

- Use an adapter or power bank supporting **USB Power Delivery** with an output power of **at least 65 W**.
- If the adapter or power bank only provides 12 V, the charger limits the maximum charge current to **1 A**.
- If the power source is weaker, the charger may not work properly. In that case, reduce the charge current or the number of batteries charged at the same time.

4.2 DC input

DC 5.5 × 2.1 mm connector for a DC power supply of **10–26 V** with at least 65 W. Make sure the polarity of the power supply is correct.

4.3 XT60 input and powering from a battery

A 10–26 V DC power supply or a **3S–6S** flight battery can be connected to the XT60 input. When a battery is connected, the charger detects its type automatically and monitors its voltage:

- if the voltage of any cell of the supply battery drops **below 3.5 V**, the charger stops charging and storage charging,
- if the cell voltage drops **below 3.3 V**, the charger switches off the display and enters power-saving mode.
- Then disconnect the supply battery and remove the charged batteries in time. **Do not discharge it below 3.5 V/cell** – it would be permanently damaged.

5. Charging and storage

5.1 Selecting the target voltage

Short presses of button ③ cycle through the four target voltages. The value applies to all channels. If the battery is above the selected voltage, the charger discharges it; if it is below, the charger charges it.

Per cell	2S pack	Use
3.80 V	7.60 V	storage of Li-Po and LiHV (recommended)
3.85 V	7.70 V	storage – alternative value
4.20 V	8.40 V	full charge of **Li-Po**
4.35 V	8.70 V	full charge of **LiHV** – never for Li-Po

5.2 Charging

① Connect the power supply (Chapter 4). The display lights up and the settings are shown in the top bar.

② Use short presses of button ③ to select the target voltage: **4.20 V** for Li-Po, **4.35 V** for LiHV.

③ Use short presses of button ② to set the charge current (0.2–1.5 A).

④ Connect the batteries to channels 1–4 via the BT3.0 or JST-XH2.54 connector – only one battery per channel.

⑤ Long-press button ② to start charging. The channel symbol lights red.

⑥ When finished, the charger beeps and the symbol turns green. Disconnect the batteries in time.

Long-press button ② to stop charging at any time. Change the settings only while charging is stopped.

5.3 Storage

Bring batteries you will not use for more than a few days to **3.80 V/cell (7.60 V for 2S)**: proceed as for charging, but select 3.80 V in step ②. A charged battery is discharged at up to 0.2 A (yellow symbol), a discharged one is charged. Discharging is slower than charging.

5.4 2S battery voltages

State	Li-Po 2S	LiHV 2S
fully charged	4.20 V/cell · 8.40 V	4.35 V/cell · 8.70 V
end of flight	3.5 V/cell · 7.0 V	3.5 V/cell · 7.0 V
storage	3.8 V/cell · 7.6 V	3.8 V/cell · 7.6 V

6. Maintenance and updates

6.1 Maintenance and storage of the device

- Disconnect the power supply and all batteries before cleaning.
- Clean the device with a dry, soft cloth. Do not use solvents or water.
- Keep the vents and the fan free of dust and dirt.
- Check the connectors; do not use damaged or loose connectors.
- Store the charger in a dry place, out of the reach of children, protected from dust, moisture and direct sunlight.

6.2 Firmware update

The manufacturer publishes firmware updates for the charger and a video showing the update procedure in the Download Center at viflydrone.com/pages/download-center. Follow the manufacturer's instructions when updating. Do not have any batteries connected to the charger during the update.

7. Troubleshooting

Problem	Possible cause and solution
Display does not light up	Check the power supply and the connector. When powered from a battery via XT60: the cell voltage has dropped below 3.3 V – disconnect the battery and charge it.
Charging stopped by itself (powered from a battery)	The cell voltage of the supply battery has dropped below 3.5 V. Use a charged battery.
Charger does not work properly when powered via USB-C	The adapter or power bank does not support PD or does not deliver at least 65 W. Use a stronger power source, reduce the charge current or the number of batteries.
Charge current does not exceed 1 A	The USB-C power source only provides 12 V – the charger limits the current. Use a power source with a higher voltage or the DC or XT60 input.
Battery does not charge	Check that the connector is fully inserted and that no second battery is connected to the channel. Make sure it is a 2S battery.
Storage charging takes a long time	The discharge current is max. 0.2 A per channel and cannot be increased – this is normal.
Battery is hot, swollen or smells	Disconnect the power supply immediately, move the battery to a non-flammable surface and do not use it any more.

8. Information for the EU and Czech Market

8.1 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.cz

8.2 Product conformity

CE

- The product bears the **CE** marking and complies with the requirements of the applicable European Union harmonisation legislation.
- A copy of the **EU Declaration of Conformity** is available from the importer at the address stated above or at the e-mail address info@rotorama.cz.
- **Product identification:** the type designation (VIFLY ToothStor) is shown on the top panel of the device.

8.3 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.

9. 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. Any warranty terms of the manufacturer **do not in any way limit** the buyer's rights arising from these regulations.

- 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 8.1.
- 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.