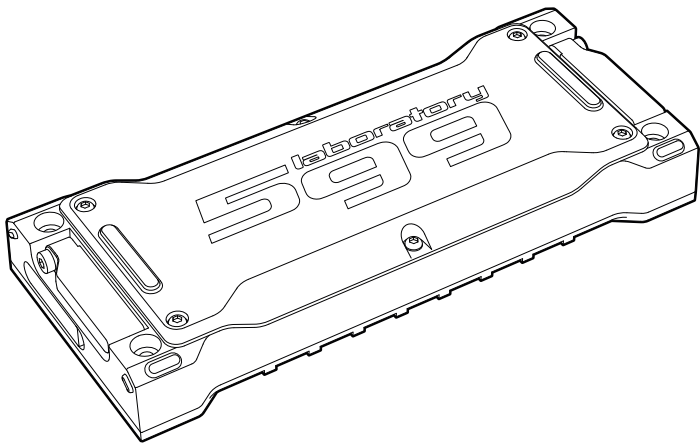




# Battery Pack

## LAB599 BP-550



**USER MANUAL**

v 1.0

The BP-550 battery pack is designed to power the Lab599 TX-500 series transceivers from replaceable Li-Ion 18650 batteries.

The BP-550 supports charging via the USB Type-C port and power from various DC sources with a voltage of 13 to 50 V (consumer electronics power supplies, vehicle on-board network, solar panels, etc.). The device has an LED indicator of the remaining battery charge and the ability to display additional information on the transceiver screen.

The battery pack body is made of impact-resistant plastic. The power connectors, buttons and LEDs have rubber seals, providing protection from splashes and dust. Folding legs provide a comfortable tilt and protection against accidental switching ON during transportation. An aluminum heatsink ensures optimal temperature conditions for the transceiver with the battery pack installed.

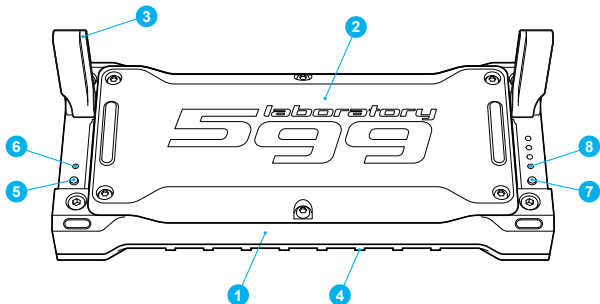
### MAIN FEATURES

- Supported transceivers: TX-500 Discovery, TX-500PRO, TX-500PRO ALTAI, TX-500MP
- Replaceable Li-Ion 18650 batteries (nominal voltage 3.7 V), 6 pcs.
- External power supply DC 13-50 V, recommended current 3 A
- Charging via USB-C, recommended power supply power of at least 30 W  
Supported fast charging standards: PD 2.0 / 3.0, BC 1.2
- Four-segment LED charge level indicator
- Materials: impact-resistant plastic case, aluminum alloy heatsink
- Dimensions (W × H × D): 90 × 207 × 30 mm
- Weight without batteries: 0.35 kg

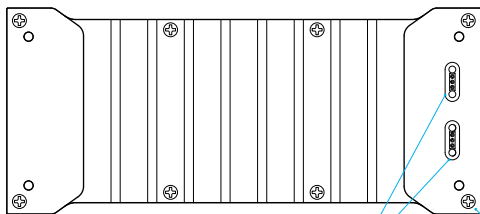
### APPEARANCE AND CONTROLS (Fig. 1)

- |  |                                      |
|--|--------------------------------------|
| 1. Device body                         | 11. DC 5.5×2.5 mm charging connector |
| 2. Top cover                           | 12. Activation buttons               |
| 3. Folding legs                        | 13. Li-Ion 18650 battery holders     |
| 4. Heatsink                            |                                      |
| 5. Power button                        |                                      |
| 6. Operation indicator                 |                                      |
| 7. Battery charge level control button |                                      |
| 8. Battery charge level indicator      |                                      |
| 9. Contact pads                        |                                      |
| 10. USB Type-C charging connector      |                                      |

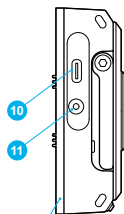
## General view



## Top view



## Left view



## Battery compartment

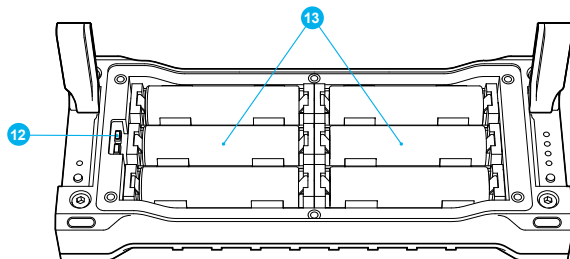


Fig. 1

**BATTERY INSTALLATION**

**!** When performing any operations with the battery pack, make sure that the battery pack is turned off (power indicator is not active).

1. Remove the top cover of the battery pack (1, Fig. 2) by unscrewing 6 M3 screws (2) using the 2.5 mm Allen key included in the delivery set.

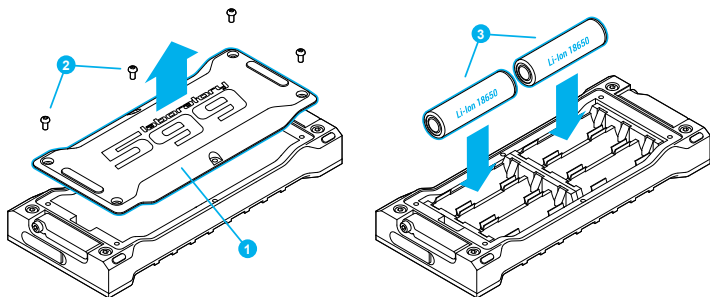
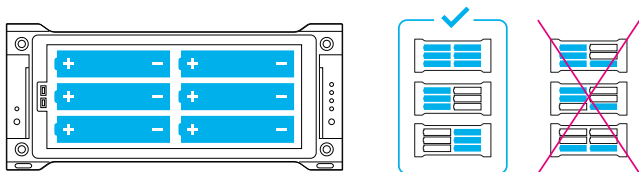


Fig. 2

2. Install Li-Ion 18650 batteries (3, Fig. 2) into the battery pack holders, observing the polarity.
3. Activate the battery pack controller by briefly connecting the charger to the battery pack or by pressing the activation buttons (12, Fig. 1, p. 3) inside the battery pack.

It is allowed to install 6 or 3 power elements according to the diagram:



**!** The battery pack controller must be activated after each replacement/ installation of new batteries.

**CONNECTING THE BATTERY PACK TO THE TRANSCEIVER**

Make sure the battery pack is turned off (power indicator is not active). Shorting the contact pads of the battery pack in the active state may lead to device failure.

1. Remove the rubber feet on the back of the transceiver that cover the through mounting holes (Fig. 3)

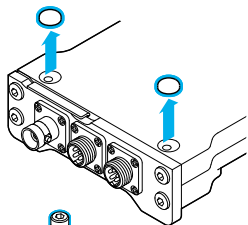


Fig. 3

2. Observing the location of the contact pads, connect the transceiver and the battery pack, secure with the M4x25 mm screws supplied (Fig. 4)

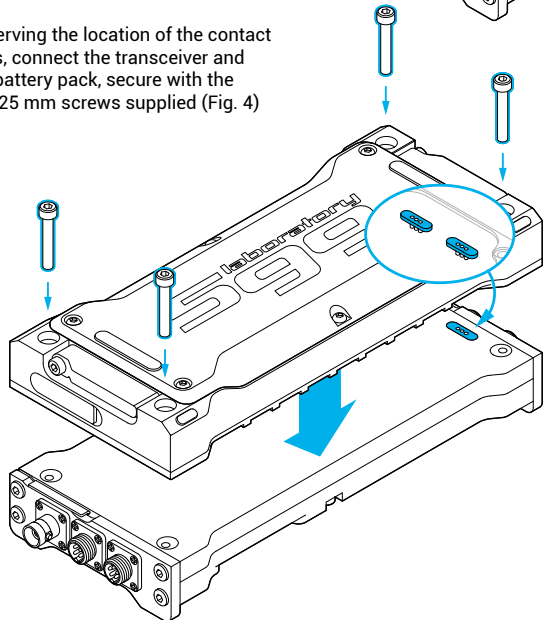


Fig. 4

## POWER ON

1. To activate the battery pack, press and hold the power button (1, Fig. 5) for 1-2 seconds until the activity indicator (2) lights up.
2. Within 10 seconds after activating the battery pack, turn on the TX-500 transceiver using the POWER button.

## POWERING OFF

1. Press the POWER key to turn off the transceiver.

The battery pack will automatically power off after 10 seconds of inactivity and the activity indicator will turn off.

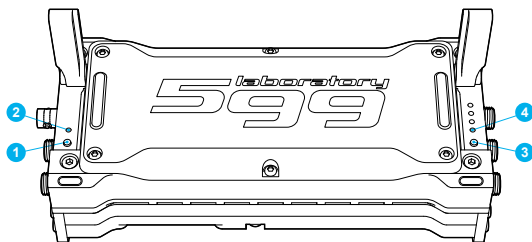


Fig. 5

## BATTERY LEVEL CONTROL

To check the battery charge level, press the button (3, Fig. 5). The four-segment indicator (4) will display the charge level in percent: 25%, 50%, 75% or 100%.

When the battery pack is connected to the transceiver, the extended battery parameter indication function is available on the transceiver screen. To do this, activate the BAT item in the on-screen menu. The following parameters will be displayed (Fig. 6): 1) Voltage of the external power source "DC IN" or "USB", when charging via the USB-C port; 2) Battery charge level; 3) Power consumption from the battery or charging power, if the battery pack is charging.

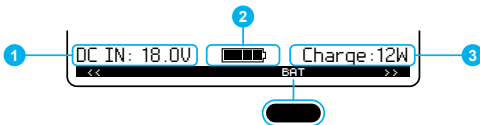
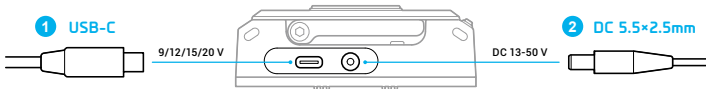


Fig. 6

## CHARGING AND EXTERNAL POWER SUPPLY

The BP-550 battery pack supports charging from external power sources connected to USB Type-C and DC 5.5×2.5 mm connectors:



- 1. USB Type-C connector.** Supported fast charging standards: PD 2.0/3.0, BC 1.2, with an operating voltage range of 9/12/15/20V. The recommended power supply unit power is at least 30W.
- 2. DC 5.5×2.5 mm connector.** Power supply voltage DC 13-50V, recommended current 3A. Direct connection of solar panels is possible, with output voltage in the range from 13 to 50V.

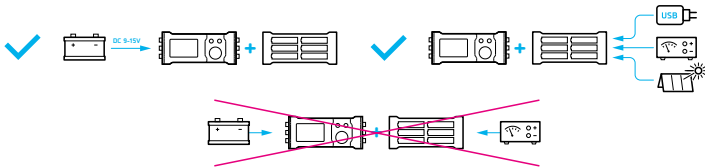


*It is not allowed to connect power sources to the transceiver and battery pack at the same time.*



*To avoid damaging the charger or disrupting the charging process, do not use the transceiver in transmit (TX) mode while charging via USB.*

Options for connecting external power sources:



When connecting external power to the transceiver with the BP-550 battery pack installed:

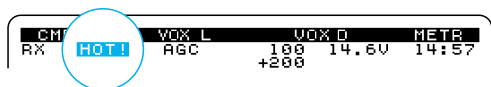
- The battery pack is not charging.
- The battery pack will act as a backup power source – in the event of a power outage or failure of the external source, the transceiver will be powered from the battery pack, provided that it is active.

## REVERSE POLARITY PROTECTION

The BP-550 battery pack has reverse polarity protection; if the power source is connected in the wrong polarity, the battery pack cannot be charged. When using third-party chargers or adapters, make sure that the power plug is soldered correctly (DC 5.5×2.5 mm).

## OVERHEATING PROTECTION

The BP-550 battery pack has built-in overheating protection. If the temperature rises above the recommended value, the transceiver screen will display the overheating warning sign "HOT!"



If the temperature rises further above the limit, the battery pack will be turned off and the power-on lock will be activated, and the transceiver will lock the transmission mode.

After the temperature drops, the battery pack and transceiver will automatically release the power-on and transmission lock.

## SAFETY REQUIREMENTS



*Do not short-circuit the contact pads on the back of the device if the device is active (the power indicator is on), this may cause the device to fail.*

- It is prohibited to service the device (open it to replace the batteries or fuse) in the active state.
- It is prohibited to connect power sources to the device whose specifications do not correspond to the parameters for this device.
- It is prohibited to connect external power sources simultaneously to the transceiver and the battery pack connected to it.
- It is prohibited to exceed the input voltage above 50V.
- It is prohibited to wrap or cover the device during operation.
- It is prohibited to leave the device unattended with a power source connected to it.



## **GENERAL PRECAUTIONS WHEN USING DEVICES CONTAINING LITHIUM-ION BATTERIES:**

- Recommended operating temperature: from 0 to +25 °C.
- Do not charge cold batteries (below 0°C).
- Avoid mechanical damage to batteries.
- Avoid overheating.
- Avoid contact with moisture.
- Do not place the device on flammable objects when charging.



*Observe the operating temperature range. When batteries are cooled below -10°C, the operating time of the device will be significantly reduced, batteries cooled below +5°C will not be fully charged, and with prolonged external heating above +40°C, the self-discharge of the battery is significantly accelerated.*

### **In order to extend the life of batteries, it is recommended:**

- Avoid constant full discharge of batteries. Frequent recharging is preferable.
- Batteries must be fully charged before long-term storage (more than 1 month). If stored for a long time in a discharged state, batteries may completely fail.
- Store at a temperature of +5°C... +20°C.

Contents are subject to change.

The current version of the manual is available at the link:

[lab599.com/downloads](http://lab599.com/downloads)



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