Saved from manuals.plus.
Open the live page for links to other documents and user manuals.

DollaTek BT4-4CHN

DollaTek 4-Channel 18650 Lithium Battery Capacity and Internal Resistance Tester

Model: BT4-4CHN

Brand: DollaTek

1. Introduction and Overview

The DollaTek BT4-4CHN is a versatile digital display module designed for testing the capacity and internal resistance of 18650 lithium batteries. It features four independent channels, allowing for simultaneous testing of multiple batteries without interference. This device supports various functions including charging, discharging, automatic charge-discharge cycles, and internal resistance measurement, providing comprehensive battery analysis.

2. Product Features

- Supports four-channel capacity and internal resistance measurement. Each channel operates independently, allowing separate settings and execution without mutual interference.
- Utilizes the DC two-wire method for internal resistance testing, providing high accuracy, especially when the battery is fully charged.
- Supports separate charging and discharging functions. The automatic mode allows for up to 9 adjustable charge and discharge cycles.
- Features automatic charge cut-off and automatic stop upon meeting discharge conditions. The automatic mode supports 1-9 adjustable cycles.
- Adjustable stop discharge voltage with 11 settings: 2.5V, 2.6V, 2.7V, 2.8V, 2.9V, 3.0V, 3.1V, 3.2V, 3.3V, 3.4V, 3.5V.
- Equipped with an active cooling fan for efficient heat dissipation.
- Includes overheat protection for safe operation.

3. Safety Information

Please read and understand all safety instructions before operating the device. Failure to do so may result in injury or damage to the device or batteries.

- Ensure correct battery polarity when inserting batteries into the holders. Incorrect polarity can damage the device and battery.
- Do not test damaged, swollen, or leaking batteries.
- Operate the device in a well-ventilated area to prevent heat buildup.

- Keep the device away from water, moisture, and flammable materials.
- Do not attempt to disassemble or modify the device. Refer all servicing to qualified personnel.
- The device is designed for 18650 lithium batteries. Do not use it with other battery types unless explicitly stated.
- Charging of lithium iron phosphate batteries is not supported by this device.

4. Package Contents

Verify that all items are present in the package:

- 1 x DollaTek 18650 Battery Capacity Internal Resistance Tester

5. Product Diagram and Components

Familiarize yourself with the different parts of the tester:

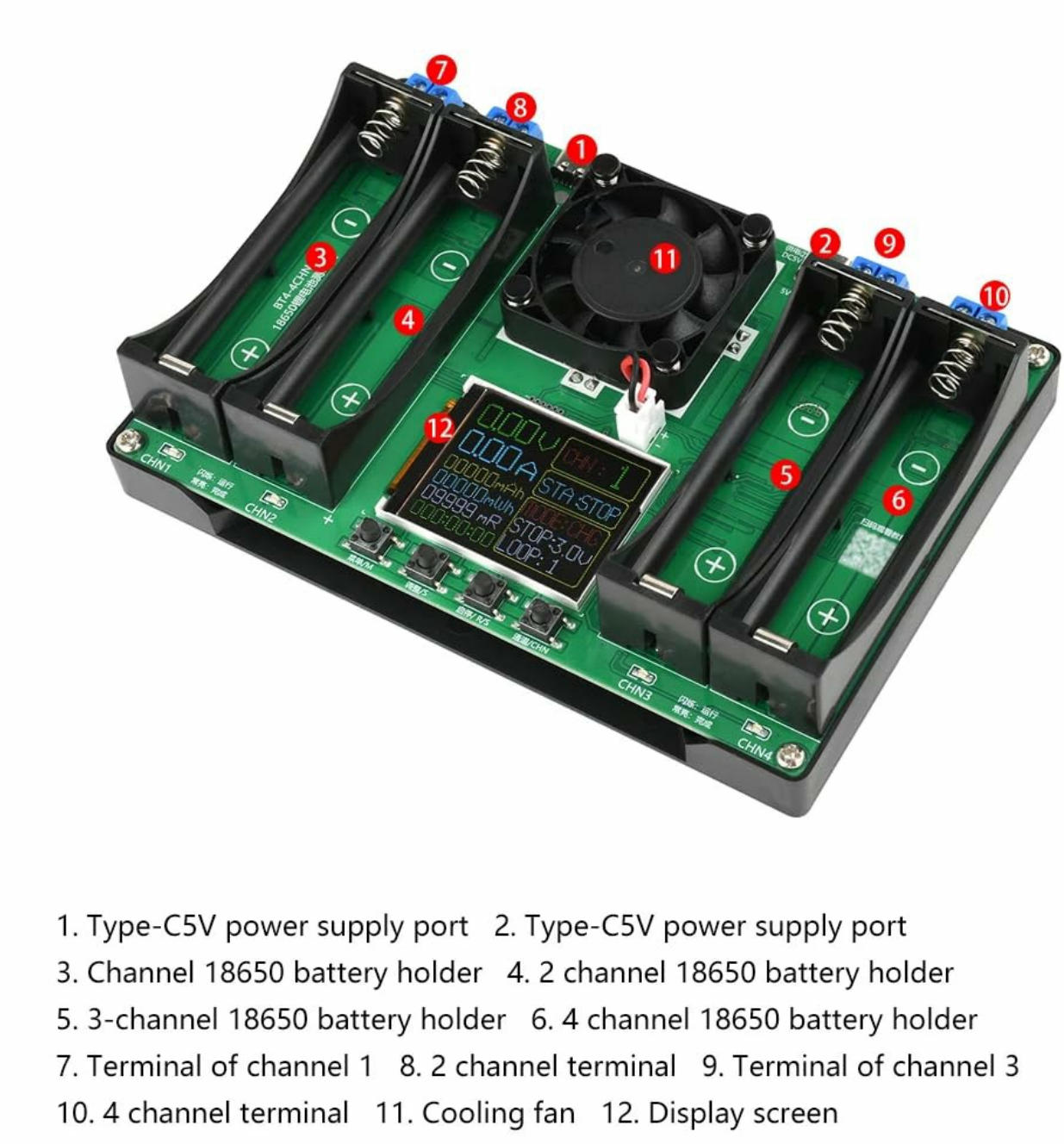

Figure 5.1: Front view of the DollaTek battery tester with key components labeled.

1. 1. Type-C 5V power supply port (Input)

2. 2. Type-C 5V power supply port (Input)
3. 3. Channel 1 18650 battery holder
4. 4. Channel 2 18650 battery holder
5. 5. Channel 3 18650 battery holder
6. 6. Channel 4 18650 battery holder
7. 7. Terminal of Channel 1 (External load connection)
8. 8. Terminal of Channel 2 (External load connection)
9. 9. Terminal of Channel 3 (External load connection)
10. 10. Terminal of Channel 4 (External load connection)
11. 11. Cooling fan
12. 12. Display screen



13. Menu /M button 14, adjust /S button 15. Start /R/S button

16. Channel /CHN button 17. Status indicator of the CHN1 channel

18. Status indicator of the CHN2 channel 19. Status indicator of the CHN3 channel

20. Status indicator of the CHN4 channel

Figure 5.2: Close-up of the control buttons and status indicators.

1. 13. Menu / M button
2. 14. Adjust / S button

3. 15. Start / R/S button
4. 16. Channel / CHN button
5. 17. Status indicator of the CHN1 channel
6. 18. Status indicator of the CHN2 channel
7. 19. Status indicator of the CHN3 channel
8. 20. Status indicator of the CHN4 channel

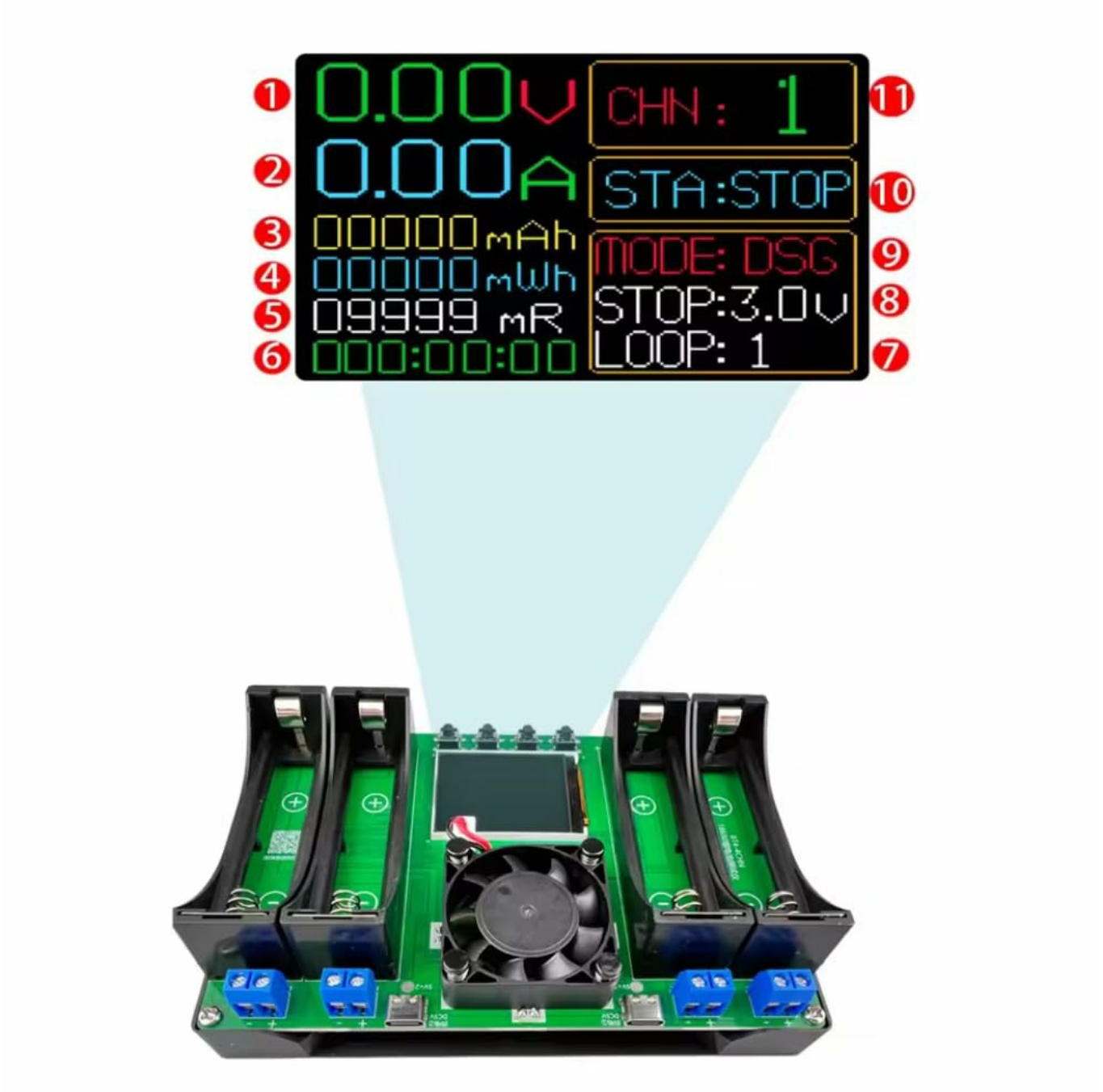

Figure 5.3: Detailed view of the display screen and its information fields.

1. 1. Voltage display (V)
2. 2. Current display (A)
3. 3. Capacity display (mAh)
4. 4. Energy display (mWh)
5. 5. Internal Resistance display (mR)
6. 6. Time display (HH:MM:SS)

7. 7. Loop count (for cyclic modes)
8. 8. Stop voltage setting (V)
9. 9. Mode indicator (e.g., DSG for Discharge)
10. 10. Status indicator (e.g., STA:STOP for Stopped)
11. 11. Channel indicator (e.g., CHN: 1)

6. Setup

Follow these steps to set up your DollaTek battery tester:

1. **Power Connection:** Connect a 5V Type-C power supply to either of the Type-C ports (1 or 2) on the device. The display should light up.
2. **Battery Insertion:** Carefully insert the 18650 lithium battery into the desired channel's battery holder (3, 4, 5, or 6), ensuring correct polarity. The positive (+) end of the battery should align with the positive (+) terminal on the holder, and the negative (-) end with the negative (-) terminal.
3. **External Load (Optional):** For discharge tests, an external load can be connected to the corresponding channel's terminal (7, 8, 9, or 10). Note that the discharge current is not adjustable and depends on the internal resistance of the battery and the device's fixed load.

7. Operating Instructions

The device offers various testing modes. Use the buttons (13-16) to navigate and control the operations.

7.1 Button Functions

- **Menu / M button (13):** Used to enter the menu, switch between settings, or confirm selections.
- **Adjust / S button (14):** Used to adjust values or scroll through options within a menu.
- **Start / R/S button (15):** Used to start or stop a test process.
- **Channel / CHN button (16):** Used to switch between the four independent channels (CHN1, CHN2, CHN3, CHN4) to view or configure their settings.

7.2 Basic Operation Flow

1. **Select Channel:** Press the CHN button (16) to select the desired channel (CHN: 1-4) for testing.
2. **Set Test Mode:** Press the M button (13) to cycle through available modes (e.g., Charge, Discharge, Auto, Internal Resistance). Use the S button (14) to adjust parameters within each mode.
3. **Adjust Parameters:** Depending on the selected mode, you may need to set parameters like stop discharge voltage (2.5V-3.5V). Use the S button (14) to change values and M button (13) to confirm.
4. **Start Test:** Once parameters are set, press the R/S button (15) to start the test. The status indicator (10) will change, and data will begin to display.
5. **Stop Test:** To manually stop a test, press the R/S button (15) again. The test will also stop automatically when the set conditions are met (e.g., full charge, discharge voltage reached).

7.3 Specific Test Modes

7.3.1 Internal Resistance Measurement

The device uses a DC two-wire method. For best accuracy, ensure the battery is fully charged before measuring internal resistance.

1. Insert the battery into the desired channel.
2. Select the channel using the CHN button.

3. Navigate to the Internal Resistance measurement mode using the M button.
4. The display will show the internal resistance value (mR).

7.3.2 Charging Function

The device can charge 18650 lithium batteries. It automatically stops when the battery is fully charged. Note: Charging of lithium iron phosphate batteries is not supported.

1. Insert the battery.
2. Select the channel.
3. Navigate to the Charge mode using the M button.
4. Press R/S to start charging. The display will show charging current and voltage.
5. The process will stop automatically when charging is complete.

7.3.3 Discharging Function

The device discharges the battery to a set voltage. The discharge current is not adjustable.

1. Insert the battery.
2. Select the channel.
3. Navigate to the Discharge mode (DSG) using the M button.
4. Set the desired stop discharge voltage (e.g., 3.0V) using the S button and M button.
5. Press R/S to start discharging. The display will show discharged capacity (mAh) and energy (mWh).
6. The process will stop automatically when the set voltage is reached.

7.3.4 Automatic Mode (Charge-Discharge Cycles)

This mode allows for automatic cycling of charge and discharge, useful for determining true capacity or conditioning batteries. Up to 9 cycles can be set.

1. Insert the battery.
2. Select the channel.
3. Navigate to the Automatic mode using the M button.
4. Set the number of cycles (1-9) and the stop discharge voltage using the S button and M button.
5. Press R/S to start the automatic cycle. The device will charge, then discharge, and repeat for the set number of cycles. The battery will be fully charged at the end of the automatic mode.

8. Maintenance

Proper maintenance ensures the longevity and accuracy of your device.

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents. Ensure no liquid enters the device.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Fan Maintenance:** Periodically check the cooling fan (11) for dust buildup. If necessary, gently clean the fan blades with compressed air to ensure proper airflow.
- **Battery Holders:** Keep the battery holders clean and free of debris to ensure good contact with the battery terminals.

9. Troubleshooting

If you encounter issues with your DollaTek battery tester, refer to the following common problems and solutions:

- **Device not powering on:**
  - Ensure the 5V Type-C power supply is correctly connected and functional.
  - Try a different Type-C cable or power adapter.
- **Battery not detected / No readings:**
  - Check that the battery is inserted with correct polarity.
  - Ensure the battery is making good contact with the terminals in the holder. Clean terminals if necessary.
  - Verify the battery is not completely dead (below 2.5V), as some functions may not initiate.
- **Inaccurate readings:**
  - For internal resistance, ensure the battery is fully charged for optimal accuracy.
  - Ensure the device is operating within its specified temperature range.
  - Avoid strong electromagnetic interference.
- **Overheating:**
  - Ensure the cooling fan (11) is not obstructed and is functioning correctly.
  - Operate the device in a well-ventilated area.
  - Reduce the load or duration of tests if consistently overheating.
- **Test stops unexpectedly:**
  - Check if the battery reached its set stop voltage during discharge.
  - Verify the battery is not faulty or damaged.
  - Ensure the device is not overheating, triggering protection.

10. Specifications

Feature	Specification
Test Quantity	4-channel charge and discharge measurement
Internal Resistance Measurement	Supported (DC two-wire method)
Charging Function	Supported (Auto cut-off upon full charge, LiFePO4 not supported)
Discharge Function	Supported (Auto stop, discharge current not adjustable)
Automatic Charge/Discharge	Supported (Battery fully charged at end of auto mode)
Cyclic Charge/Discharge	Supported (1-9 cycles adjustable, only in automatic mode)
Stop Discharge Voltage	2.5V, 2.6V, 2.7V, 2.8V, 2.9V, 3.0V, 3.1V, 3.2V, 3.3V, 3.4V, 3.5V (11 adjustable settings)
Cooling Mode	Active fan cooling
Overheat Protection	Supported
Power Source	Battery-Powered (via 5V Type-C input)
Minimum Operating Voltage	2.5 Volts

Maximum Operating Temperature	50 Degrees Celsius
Measurement Type	Ohmmeter (for internal resistance)
Dimensions (Package)	18.2 x 11.4 x 4.9 cm
Weight (Package)	240 g

11. Warranty and Support

For warranty information and technical support, please contact the seller or manufacturer, DollaTek, directly through the platform where the product was purchased. Keep your purchase receipt as proof of purchase.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question