XTAR XTAR VC4SL

XTAR VC4SL Smart Rechargeable Battery Charger User Manual

Model: **VC4SL** | Brand: **XTAR**

1. Introduction

The XTAR VC4SL is an upgraded version of the VC4S, designed as a smart, four-bay rechargeable battery charger. It is compatible with a wide range of Li-ion and Ni-MH/Ni-CD batteries, offering advanced features such as capacity testing, internal resistance measurement, and storage mode. With its intelligent LCD screen and multiple safety protections, the VC4SL provides efficient and safe charging for your batteries.

2. Package Contents

Upon opening the package, please verify that all the following items are included:

- XTAR VC4SL Battery Charger
- USB Type-C Charging Cable
- User Manual
- Pouch for storage



Image: The XTAR VC4SL charger, its USB Type-C charging cable, the user manual, and a gray storage pouch, laid out to show all included items.

3. Product Features and Overview

The XTAR VC4SL charger incorporates several features for optimal battery management:

- **Intelligent LCD Screen:** Displays real-time charging status, capacity, current, internal resistance, and mode.
- **Type-C Input:** Modern and convenient power input.
- **Multiple Operating Modes:** Supports Charging, Grad (Capacity Test), and Store modes.
- **Adjustable Charging Current:** Allows manual selection of charging current from 0.25A to 3A per slot.
- **Comprehensive Safety Protections:** Includes over-charge, over-voltage, over-current, short-circuit, over-temperature, and anti-reverse protections.
- **Temperature Monitoring Design:** Ensures safe operation by dissipating heat effectively.



Image: Front view of the XTAR VC4SL charger, showcasing its LCD display and four battery slots.



Image: Visual representation of the XTAR VC4SL's key features, including its intelligent LCD, Type-C port, and various operational modes.



Image: Detailed view of the LCD screen, explaining the meaning of displayed information such as capacity, current, internal resistance, and charged power.



Image: Illustration of the charger's maximum 3A charging capability per slot with QC3.0 input, alongside its six-fold safety protection system.

4. Setup

1. **Connect to Power Supply:** Connect the USB Type-C charging cable to the VC4SL charger and then to a suitable USB power adapter (a QC3.0 adapter is recommended for optimal performance, especially for 3A charging).
2. **Insert Batteries:** Carefully insert your rechargeable batteries into the charging bays, ensuring correct polarity (+ and - ends). The charger will automatically detect the battery type and begin charging.

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Video: This official XTAR video demonstrates the unboxing, connection to power, and insertion of batteries into the VC4SL charger, showing the initial setup process and display activation.

5. Operating Instructions

5.1. Adjusting Charging Current

The VC4SL allows you to manually adjust the charging current for each channel. Press the**"Curr."** button to cycle through available current options (3A, 2A, 1A, 0.5A, 0.25A). This adjustment applies to the selected channel (CH1-CH4). A single press of the CH button (CH1, CH2, CH3, CH4) will select the corresponding channel for current adjustment.



Image: The 'Curr.' button and the various current settings available for selection on the LCD screen.

5.2. Switching Operating Modes

The VC4SL supports three main operating modes: Charging, Grad (Capacity Test), and Store. Long-press the**"Mode"** button to cycle between these modes. Short-press the "Mode" button to switch between displaying Capacity (Cap.), Current (Cur.), and Internal Resistance (IR) in Charging mode.

5.2.1. Charging Mode

This is the default mode for charging batteries. The charger automatically detects the battery type (Li-ion or Ni-MH/Ni-CD) and applies the appropriate charging algorithm. The display shows real-time charging progress, including accumulated capacity (mAh), current, and internal resistance.



Image: The charger's display in Charging Mode, indicating the charging status and parameters for each battery.

5.2.2. Grad Mode (Capacity Test)

Grad mode is used to test the actual capacity of your batteries. The process involves a full charge, followed by a full discharge, and then a final full charge. The capacity measured during the discharge cycle is the actual capacity of the battery.

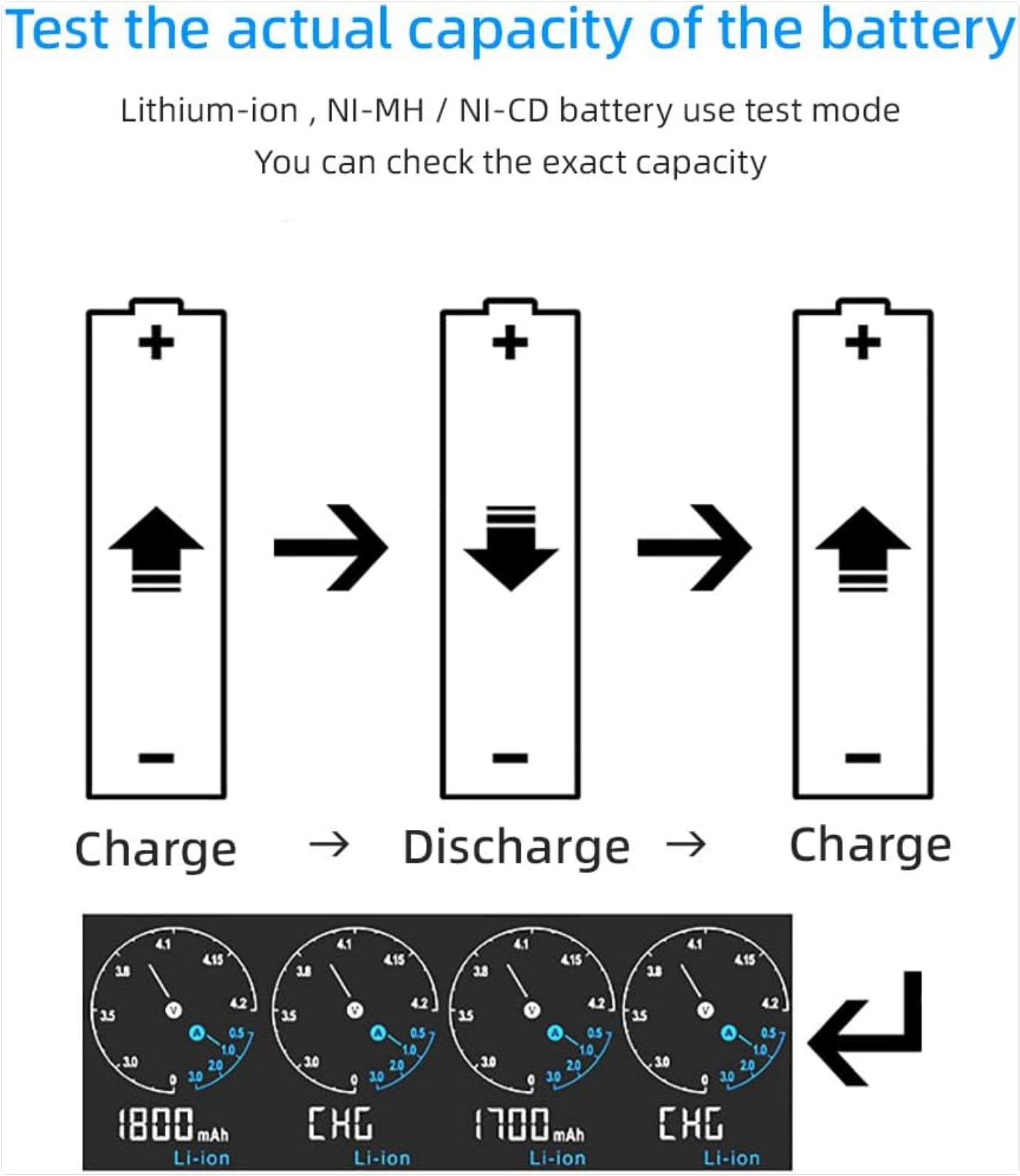


Image: A visual guide to the capacity test process, showing the charge-discharge-charge cycle and how capacity is measured.



Image: The charger's display in Grad Mode, indicating the progress of the capacity test.

5.2.3. Store Mode

Store mode is designed to prepare Li-ion batteries for long-term storage by charging or discharging them to an optimal storage voltage (typically around 3.7V-3.8V). This helps to prolong the battery's lifespan when not in active use.



Image: The charger's display in Store Mode, showing the battery voltage being adjusted for long-term storage.

5.3. LCD Screen Indications

The LCD screen provides important information and alerts:

- **"Err":** Indicates a reverse connection of the battery. Please re-insert the battery with correct polarity.
- **"Null":** Signifies battery damage or over-discharge. The charger may attempt to reactivate the battery, but if it persists, the battery might be unusable.
- **"Full":** The battery in that slot is fully charged.



Image: The LCD screen displaying common error messages and the 'Full' indication.

6. Compatible Battery Types

The XTAR VC4SL is designed to charge a wide variety of cylindrical rechargeable batteries, including:

- **3.6V/3.7V Li-ion/IMR/INR/ICR:** 10440, 14500, 14650, 16340, 17335, 17500, 17670, 18350, 18490, 18500, 18650, 18700, 20700, 21700, 22650, 25500, 26650, 32650. *Note: Protected 21700 batteries are compatible.*
- **1.2V Ni-MH/Ni-CD:** AAAA, AAA, AA, A, SC, C, D.



Image: The XTAR VC4SL charger demonstrating its compatibility with a wide range of battery sizes and types, including Li-ion and Ni-MH/Ni-CD.



Image: Examples of common devices that utilize the battery types compatible with the XTAR VC4SL charger.

7. Safety Precautions

- Use only with compatible battery types as listed in Section 6.
- Ensure correct battery polarity when inserting into the charger.
- Do not attempt to charge non-rechargeable batteries.
- Use a suitable power adapter (QC3.0 recommended for full performance). Insufficient power supply can lead to charging issues.
- Do not disassemble or modify the charger.
- Keep the charger away from water, high temperatures, and direct sunlight.
- Monitor batteries during charging, especially for the first few cycles.
- If any abnormal behavior is observed (e.g., excessive heat, smoke, unusual odors), immediately disconnect the power and remove batteries.

8. Troubleshooting

If you encounter issues with your XTAR VC4SL charger, consider the following common solutions:

- **Charger not turning on or screen blinking:**

  Ensure you are using a power adapter that provides sufficient wattage. The VC4SL requires a robust power source, such as an 18W QC3.0 adapter, to function correctly. Some standard USB ports (e.g., on a PC) or low-power adapters may not provide enough power, leading to erratic behavior or failure to power on.

- **"Err" displayed:**

  This indicates reverse polarity. Remove the battery and re-insert it with the positive (+) end aligned with the positive terminal on the charger, and the negative (-) end with the negative terminal.

- **"Null" displayed:**

  This means the battery is either damaged or severely over-discharged. The charger will attempt to reactivate it. If the "Null" message persists after a few minutes, the battery may be beyond recovery and should be safely disposed of.

- **Batteries not charging or charging slowly:**

  Verify the power adapter's output. If using a non-QC3.0 adapter, charging speeds may be reduced. Also, check the selected charging current for each channel using the "Curr." button. Ensure the battery contacts in the charger and on the battery are clean.

- **Charger feels warm during operation:**

  It is normal for the charger to become warm during charging, especially when charging at higher currents or with multiple batteries. The VC4SL has a temperature monitoring design. If it becomes excessively hot or emits smoke/unusual odors, disconnect it immediately.

9. Specifications

Feature	Specification
Model	XTAR VC4SL
Input Voltage	3.6 Volts (USB Type-C)
Output Voltage	3.6 Volts (Li-ion), 1.2 Volts (Ni-MH/Ni-CD)
Max Charging Current	3A x 1 (single slot), 2A x 2, 1A x 4
Compatible Battery Types	3.6V/3.7V Li-ion/IMR/INR/ICR (10440-32650), 1.2V Ni-MH/Ni-CD (AAAA-D)
Dimensions	8.15 x 4.92 x 1.73 inches
Item Weight	11.3 ounces
Safety Certifications	CE, FCC, UL

10. Warranty and Support

XTAR products are manufactured to high-quality standards. For warranty information, technical support, or service inquiries, please refer to the official XTAR website or contact your authorized dealer. Keep your purchase receipt as proof of purchase for warranty claims.
Official XTAR Store: XTAR Official Store on Amazon

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