

XTAR VP4L Plus

XTAR Dragon VP4L Plus Professional Universal Battery Charger and Capacity Tester

User Manual

1. INTRODUCTION

The XTAR Dragon VP4L Plus is a professional-grade universal battery charger and capacity tester designed for a wide range of rechargeable Li-ion and Ni-MH batteries. This device offers advanced features including precise capacity testing, internal resistance measurement, battery refresh functions, and a USB output for charging external devices. Please read this manual thoroughly before operation to ensure safe and efficient use.

2. SAFETY INFORMATION

- Use only the provided power adapter.
- Do not attempt to charge non-rechargeable batteries.
- Ensure correct battery polarity when inserting batteries into the charger slots.
- Do not expose the charger to water, high humidity, or extreme temperatures.
- Keep the device away from children and pets.
- Do not disassemble or modify the charger.
- If the charger emits smoke, unusual odors, or excessive heat, immediately disconnect it from the power source.
- Always monitor batteries during charging, especially when using higher current settings.

3. PACKAGE CONTENTS

Verify that all items are present in your package:

- XTAR Dragon VP4L Plus Charger
- AC Power Adapter
- Car Adapter
- Test Probes
- Carrying Bag

XTAR®



Image: Contents of the XTAR Dragon VP4L Plus package, showing the charger, power adapter, car adapter, test probes, and a carrying bag.

4. PRODUCT FEATURES

- **Intelligent Detection:** Precisely measures battery voltage and internal resistance.
- **Record Function:** Built-in micro memory card automatically saves the last 64 test records of discharging and charging capacity.
- **High-quality LCD Screen:** Displays real-time information including charging current, battery status, capacity percentage, battery type, channel, voltage, resistance, and mode status.
- **Multiple Charging Currents:** Selectable charging currents (0.5A, 1.0A, 2.0A) to optimize battery lifespan.
- **Test Mode:** Discharges and then fully charges batteries to accurately determine their real capacity.
- **Refresh Mode:** Helps eliminate the memory effect in Ni-MH batteries.
- **USB Output Function:** Functions as a power bank with 5V output for charging external devices.
- **Broad Compatibility:** Supports various Li-ion (3.6V/3.7V) and Ni-MH/Ni-CD batteries (AAAA, AAA, AA, A, SC, C, D).
- **Safety Protections:** Includes short circuit protection, overcharge protection, 0V activation,

temperature control, and reverse polarity protection.

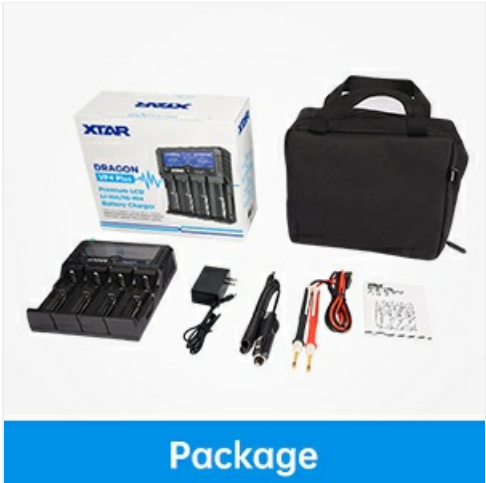


Image: Overview of the XTAR Dragon VP4L Plus charger, emphasizing its capabilities as a personal battery doctor with features like 11.1V/3S battery pack support, Li-ion/Ni-MH charging, TEST mode for real capacity, REFRESH mode for Ni-MH, internal resistance testing, and USB output.

5. SETUP

- Connect Power:** Plug the AC power adapter into a wall outlet and connect the other end to the DC 12V 3A input port on the back of the XTAR Dragon VP4L Plus charger. Alternatively, use the car adapter for in-vehicle charging.
- Initial Display:** Upon connecting power, the LCD screen will illuminate, indicating the charger is ready for use.

Greatest Compatibility

3.6V/3.7V Li-ion / IMR / INR / ICR:

10440 14500 14650 16340 17335 17500 17670
18350 18490 18500 18650 20700 21700 22650
25500 26650 32650

Rechargeable Ni-MH/Ni-CD:

AAAA AAA AA A SC C D

Battery pack:

11.1V/3S battery pack

* Ni-MH symbol will flick max 10 minutes when charging Ni-MH battery due to 0V activation.

* Note: Cannot charge protected 20700 / 21700 batteries.

A detailed photograph of the XTAR Dragon VP4L Plus charger. The LCD screen shows two channels: CH1 (Li-ion) at 84% charge with 0007mAh and CH2 (Li-ion) at 91% charge with 0020mAh. The current is 1.0A. Below the screen are four battery slots. The first two slots contain XTAR 2200mAh batteries. The last two slots are empty. The charger has a USB output port, a 12V 3A input port, a probes port, and buttons for current/refresh and anode/cathode. The construction is matte.

Short circuit Protection

Overcharge Protection

0V Activation

Temperature Control

Reverse Protection

Three-stage Charging

Image: Detailed diagram of the XTAR Dragon VP4L Plus, showing the LCD display, 11.1V/3S battery pack USB output, 12V 3A input, probes port, current/refresh buttons, anode, cathode, and matte material construction.

6. OPERATING INSTRUCTIONS

6.1. Charging Batteries

1. Insert one or more rechargeable batteries into the charging slots, observing correct polarity (+/-). The charger will automatically detect the battery type (Li-ion or Ni-MH).
2. The LCD screen will display charging information for each inserted battery.
3. To select the charging current, press the corresponding button for the channel (CH1, CH2, CH3, CH4). Available currents are 0.5A, 1.0A, and 2.0A. Note that channels CH1 & CH4 support 0.5A/1.0A/2.0A, while CH2 & CH3 support 0.5A/1.0A.
4. The charger will begin charging. The display will show progress, current, and voltage.
5. Charging is complete when the battery icon is full and the display indicates 100%.



High-quality LCD Screen

LCD screen displays all information you want.

- Charging Current
- Battery & Battery Pack Status
- Battery Capacity Percentage
- Battery Types and Channels
- Battery Voltage
- Battery Resistance
- CHARGE/TEST/REFRESH Status
- 3S Pack/USB Output Status
- Phonic Reminder

Image: The XTAR Dragon VP4L Plus charger screen showing the selection of 3 optional charging currents (0.5A, 1.0A, 2.0A) for different battery slots, allowing users to choose the optimal current for their batteries.

6.2. Capacity Test Mode

Test mode determines the actual capacity of a battery by fully discharging it and then fully recharging it, measuring the energy put back in.

1. Insert the battery into a slot.
2. Press the 'TEST' button for the desired channel. The charger will initiate a discharge cycle, followed by a full charge.
3. The LCD will display the measured capacity (mAh) after the cycle is complete.
4. The last 64 test records are automatically saved to the internal memory card for review.

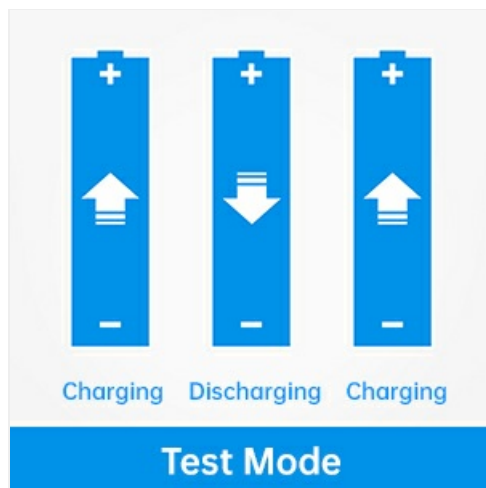


Image: A visual representation of the Test Mode, showing the sequence of charging, discharging, and then charging again to accurately measure battery capacity.

6.3. Battery Refresh (Refresh Mode)

Refresh mode is particularly useful for Ni-MH batteries to reduce or eliminate the 'memory effect', which can decrease their effective capacity over time.

1. Insert the Ni-MH battery into a slot.
2. Press the 'REFRESH' button for the desired channel. The charger will perform a series of discharge and charge cycles to optimize the battery's performance.



Image: The XTAR Dragon VP4L Plus charger with a battery inserted, indicating the Refresh Mode is active, designed to optimize Ni-MH battery performance.

6.4. USB Output Function

The XTAR Dragon VP4L Plus can function as a power bank to charge external USB devices.

1. Ensure at least one charged Li-ion battery is inserted into the charger.
2. Connect your USB device to the USB output port (Smart 5V Max. 2.4A) on the charger.
3. The charger will begin supplying power to your device.



Image: A close-up view of the XTAR Dragon VP4L Plus's side panel, highlighting the USB output port (Smart 5V Max. 2.4A) for charging external devices, alongside the 12V 3A input and other ports.

6.5. Using Test Probes

The included test probes allow for precise measurement of battery voltage and internal resistance.

1. Connect the test probes to the designated probes port on the charger.
2. Carefully touch the red probe to the positive terminal and the black probe to the negative terminal of the battery you wish to test.
3. The LCD screen will display the voltage and internal resistance ($m\Omega$) of the battery.



Image: The XTAR Dragon VP4L Plus charger connected to test probes, demonstrating its intelligent detection capability by measuring the internal resistance of a battery, displayed on the LCD screen.

7. COMPATIBLE BATTERY TYPES

The XTAR Dragon VP4L Plus supports a wide range of rechargeable batteries:

- **3.6V/3.7V Li-ion / IMR / INR / ICR:** 10440, 14500, 16340, 17335, 17500, 17670, 18350, 18490, 18500, 18650, 20700, 21700, 22650, 25500, 26650, 32650.

- **Rechargeable Ni-MH/Ni-CD:** AAAA, AAA, AA, A, SC, C, D.
- **Battery Pack:** 11.1V/3S battery pack.

Note: This charger cannot charge protected 20700 / 21700 batteries.



Image: The XTAR Dragon VP4L Plus charger screen showing its greatest compatibility with various Li-ion and Ni-MH/Ni-CD battery sizes, along with a list of integrated safety protections like short circuit, overcharge, 0V activation, temperature control, reverse protection, and three-stage charging.

8. MAINTENANCE

- **Cleaning:** Disconnect the charger from power before cleaning. Use a soft, dry cloth to wipe the surface. Do not use abrasive cleaners or solvents.
- **Storage:** Store the charger in a cool, dry place away from direct sunlight and extreme temperatures when not in use.
- **Contact Points:** Periodically check the charging slots and test probes for any debris or corrosion. Clean gently if necessary to ensure good contact.

9. TROUBLESHOOTING

Charger displays "Err" message:

This usually indicates a problem with the battery. It could be a short-circuited battery, a battery with extremely low voltage (below 0V), or an incompatible battery type. Remove the battery and inspect it. If the battery is below 0V, the charger's 0V activation function may attempt to revive it, but some severely depleted batteries may not be recoverable.

Battery not charging:

Ensure the battery is inserted with correct polarity. Check if the power adapter is securely connected. Verify that the battery is a supported rechargeable type and not damaged.

Inaccurate capacity readings:

For best accuracy, ensure batteries are fully discharged before starting a Test Mode cycle. Environmental factors like temperature can also affect readings. For highly precise measurements, specialized equipment may be required.

USB output not working:

Ensure there is at least one charged Li-ion battery in the charger. Check the USB cable and the external device for proper connection.

10. SPECIFICATIONS

Product Dimensions	0.7 x 3.54 x 0.7 inches (charger unit)
Item Weight	1.92 pounds
Manufacturer	XTAR
Input Voltage	DC 12V 3A
USB Output	Smart 5V Max. 2.4A
Charging Currents	0.5A, 1.0A, 2.0A (Channel dependent)
Supported Battery Types	Li-ion (3.6V/3.7V), Ni-MH/Ni-CD
Safety Certifications	CE, FCC, RoHS

11. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official XTAR website or contact your retailer. Keep your purchase receipt as proof of purchase for warranty claims.

XTAR Official Website: www.xtar.cc