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iCOVER lii-600

iCOVER Universal Smart Battery Charger Lii-600 User Manual

Model: Lii-600 | Brand: iCOVER

1. Introduction

The iCOVER Lii-600 Smart Charger is a high-end, quick charger featuring touchscreen control and four independent channels for rechargeable batteries. It offers comprehensive functions including capacity testing, internal resistance measurement, temperature monitoring, short-circuit protection, overcharge protection, and zero-volt battery activation. The charger automatically monitors the battery charge, discharge, and testing processes. It is designed to charge various cylindrical lithium-ion and nickel-metal hydride batteries, making it suitable for strong flashlights, power tools, instrumentation, digital cameras, and other electronic devices. Its user-friendly design, portability, and powerful features make it an ideal charging solution.



Figure 1.1: The iCOVER Lii-600 Smart Battery Charger, including the main unit, AC power adapter, and car charger adapter.

2. Key Features

- **Touch Control Function:** Intuitive touchscreen interface for easy operation.
- **Independent 4-Slot Operation:** Each of the four charging slots operates independently.
- **Dual Working Modes:** Features automatic (AUTO) and manual (MANUAL) modes. The system defaults to AUTO mode with automatic current distribution.
- **Adjustable Charging Current:** Offers multiple charging current options: 300mA, 500mA, 700mA, 1000mA, 1500mA, 2000mA, 2500mA, 3000mA (for Li-ion) and 250mA, 500mA, 1000mA (for NiMH).
- **Quick Test Mode:** Allows for faster battery capacity detection compared to normal mode.
- **Large LCD Screen:** Displays battery type, voltage, time, charging percentage, charging capacity, and provides auto-alert indications for problematic battery cells.
- **Universal Compatibility:** Supports various battery specifications including 10440, 14500, 16340, 17355, 17500, 17670, 18490, 18650, 22650, 26500, 26650, A, AA, AAA, SC.
- **Multiple Protection Functions:** Includes protection against overcharge, over-discharge, short circuit, high temperature, and features 0V activation, 1.65V-2.2V non-charge function, intelligent bad battery recognition, and

reverse polarity protection.



Figure 2.1: Overview of the charger's functions and features, highlighting touch control, 3A fast charging, discharge current options, battery repair, and temperature monitoring.

3. Safety Warnings

Please read and understand the following safety warnings before using the charger to prevent injury or damage:

- This charger is designed exclusively for cylindrical lithium-ion batteries and nickel-metal hydride batteries. Do not attempt to charge lithium iron phosphate batteries or any other battery types.
- Always refer to the battery's recommended charging current. Do not exceed the recommended charging current to avoid damaging the battery or charger.
- Only use the provided standard power adapter. Using non-standard power adapters may cause malfunction or safety hazards.
- The charger may become warm during charging and discharging cycles. Exercise caution to avoid burns.
- When not in use, unplug the power adapter and remove all batteries from the charger.
- Operate the charger only at room temperature and indoors. Avoid exposure to extreme temperatures or moisture.
- The test data provided by this product is for reference only. For precise measurements, consult professional instruments.

4. Product Overview and Components

Familiarize yourself with the main components of your Lii-600 Smart Charger:

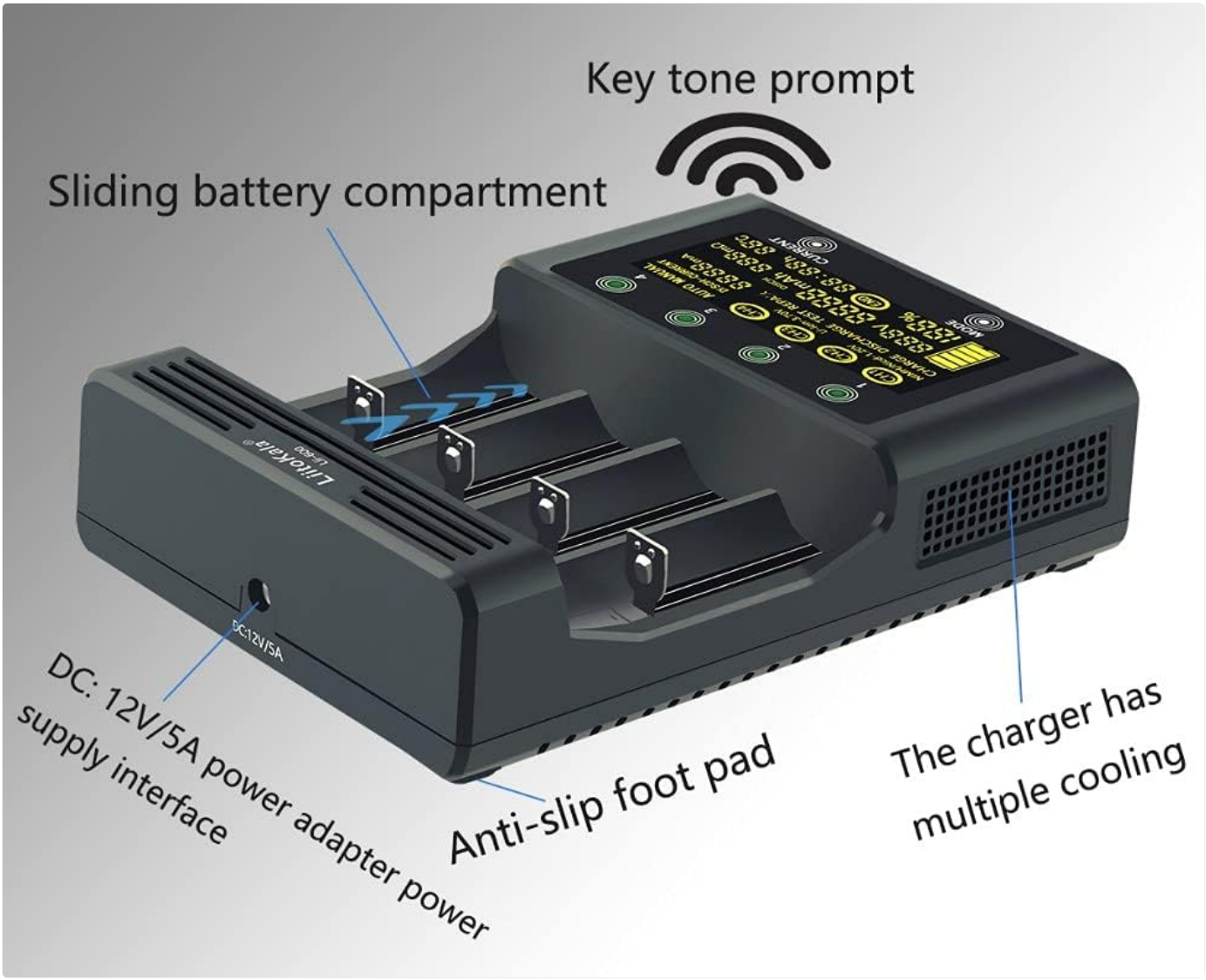


Figure 4.1: Diagram illustrating key components including the sliding battery compartment, DC 12V/5A power supply interface, anti-slip foot pads, multiple cooling vents, and key tone prompt.

- **Sliding Battery Compartment:** Adjustable slots to accommodate various battery sizes.
- **DC 12V/5A Power Supply Interface:** Input port for connecting the power adapter.
- **Anti-slip Foot Pads:** Ensures stability on surfaces.
- **Cooling Vents:** Multiple vents for efficient heat dissipation during operation.
- **Key Tone Prompt:** Provides audible feedback for operations.
- **Display Panel:** LCD screen showing detailed charging information.

5. Setup

Follow these steps to set up your iCOVER Lii-600 Smart Charger:

1. **Unpack the Charger:** Carefully remove the charger and all accessories from the packaging.
2. **Connect Power:** Insert the DC plug of the provided 12V/5A power adapter into the power supply interface on the back of the charger. Plug the AC end of the adapter into a standard wall outlet. The LCD screen will illuminate.
3. **Optional Car Charger:** If using in a vehicle, connect the car charger adapter to the DC input and plug it into your vehicle's 12V power socket.

6. Operating Instructions

6.1 Inserting Batteries

Gently slide the battery into one of the four charging slots, ensuring the correct polarity (+/-) matches the markings on the charger. The charger will automatically detect the battery type (Li-ion or NiMH) and begin charging in AUTO mode.

6.2 Understanding the Display Panel

The large LCD screen provides real-time information about the charging process for each slot:

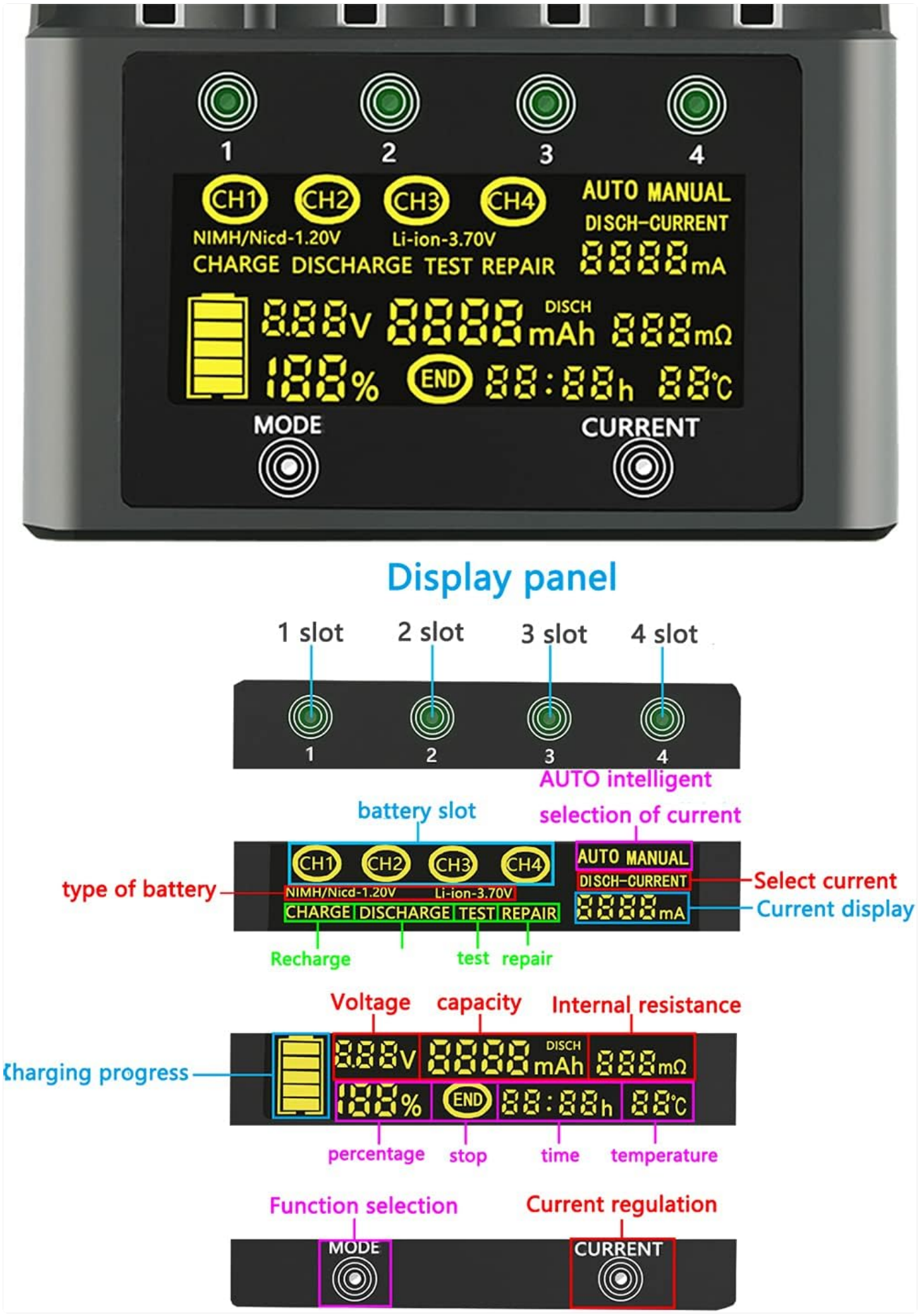


Figure 6.1: Breakdown of the display panel, showing battery slot indicators, battery type, charging/discharge/test/repair modes, voltage, capacity, internal resistance, charging progress, time, and temperature.

- **Battery Slot Indicators (CH1-CH4):** Shows which slot is active.
- **Battery Type:** Displays 'NiMH/NiCd-1.20V' or 'Li-ion-3.70V'.
- **Mode:** Indicates 'CHARGE', 'DISCHARGE', 'TEST', or 'REPAIR'.
- **Voltage (V):** Current battery voltage.
- **Capacity (mAh):** Accumulated charge/discharge capacity.
- **Internal Resistance (mΩ):** Battery's internal resistance.
- **Charging Progress:** Visual battery icon indicating charge level.
- **Time (h:m):** Elapsed time for the current operation.
- **Temperature (°C):** Battery temperature monitoring.
- **Current (mA):** Current charging or discharging rate.

6.3 Charging Modes (AUTO/MANUAL)

The charger defaults to AUTO mode, automatically selecting the optimal charging current. To switch to MANUAL mode and adjust settings, use the 'MODE' button.

6.4 Current Selection

In MANUAL mode, use the 'CURRENT' button to cycle through available charging/discharging current options. Select the appropriate current based on your battery's specifications.

6.5 Battery Type Compatibility

The Lii-600 charger is compatible with a wide range of rechargeable batteries:



Figure 6.2: The charger supports 3.6V/3.7V Li-ion batteries (e.g., 18650, 26650, 21700) and 1.2V Ni-MH batteries (e.g., AA, AAA). It can charge up to two 26650 and two 18650 batteries simultaneously.

- **Li-ion Batteries (3.6V/3.7V):** 10440, 14500, 16340, 17355, 17500, 17670, 18490, 18650, 22650, 26500, 26650, and other similar cylindrical sizes.
- **NiMH/NiCd Batteries (1.2V):** A, AA, AAA, SC.

6.6 Discharge and Test Functions

The charger can perform discharge and capacity test functions. Refer to the on-screen prompts and the 'MODE' button to select these operations.

6.7 Battery Repair Function

The Lii-600 includes a battery repair function, which can help restore certain batteries. This function is typically accessed via the 'MODE' button.

6.8 Temperature Monitoring

The charger continuously monitors battery temperature to ensure safe operation. The display will show the current temperature. A red light indicates detection or charging, while a green light indicates full charge or complete detection.



Figure 6.3: The charger features a temperature sensor. A red light indicates charging or detection, and a green light indicates a full charge or completed detection.

7. Maintenance

To ensure the longevity and optimal performance of your iCOVER Lii-600 Smart Charger, follow these maintenance guidelines:

- **Cleaning:** Disconnect the charger from power before cleaning. Use a soft, dry cloth to wipe the exterior. Do not use abrasive cleaners or solvents.
- **Storage:** Store the charger in a cool, dry place away from direct sunlight and moisture when not in use.

- **Ventilation:** Ensure the cooling vents are not obstructed during operation to prevent overheating.
- **Handle with Care:** Avoid dropping the charger or subjecting it to strong impacts.

8. Troubleshooting

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

- **Charger Not Turning On:**
  - Ensure the power adapter is securely connected to both the charger and a working power outlet.
  - Verify the power outlet is functional.
- **Battery Not Charging:**
  - Check that the battery is inserted with correct polarity (+/-).
  - Ensure the battery type is compatible with the charger (Li-ion or NiMH).
  - The charger may display an error if the battery is severely damaged or has a voltage below 1.65V (for NiMH) or 0V (for Li-ion, requiring activation).
- **Charger Getting Hot:**
  - It is normal for the charger to get warm during charging/discharging.
  - Ensure adequate ventilation around the charger and that vents are not blocked.
  - If it becomes excessively hot, disconnect power and allow it to cool before resuming use.
- **Display Not Responding to Touch:**
  - Ensure your fingers are clean and dry.
  - Try unplugging and re-plugging the charger to reset it.

9. Technical Specifications

Parameter	Value
DC Input Voltage	12.0V/5.0A
NiMH Battery Charging Current (1.48V)	250mA / 500mA / 1000mA x 4
Lithium Battery Charging Current (4.20V)	250mA / 500mA / 1000mA / 1500mA / 2000mA / 2500mA / 3000mA x 4
Rechargeable Battery Specifications	18650, 26650, 14500, AA, AAA, etc.
Discharge Current	250mA x 4 / 500mA x 4 / 750mA x 4
Termination Mode	Intelligent Voltage Monitoring
External Dimensions (L x W x H)	165mm x 115mm x 40mm
Item Weight	2.23 pounds
Output Voltage	4.2 Volts
Specification Met	FCC

10. Warranty and Support

Specific warranty information for the iCOVER Lii-600 Smart Battery Charger is not provided in the product data. For details regarding warranty coverage, technical support, or service, please contact iCOVER customer support directly through their official website or the retailer where the product was purchased. Keep your purchase receipt as proof of purchase for any warranty claims.

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