diymore Li-ion Battery V3 Shield 18650 Holder (Model A1012590US)

diymore Li-ion Battery V3 Shield 18650 Holder Instruction Manual

Model: A1012590US

1. Product Overview

The diymore Li-ion Battery V3 Shield is a versatile module designed for DIY electronics projects, providing stable 3V and 5V power outputs from an 18650 lithium-ion battery. It integrates battery charging capabilities via a Micro USB port and offers a Type-A USB output for powering external devices. This module includes essential protection features to ensure safe operation.

Key Features:

- Micro USB port for input charging.
- Type-A USB port for 5V output.
- Dedicated 3V/1A and 5V/2A output pins.
- Single switch control for USB output.
- Integrated over-charge protection.
- Integrated over-discharge protection.

What's in the Box:

- 1 x diymore Li-ion Battery V3 Shield 18650 Holder

Note: 18650 battery is not included and must be purchased separately.

Image 1.1: The diymore Li-ion Battery V3 Shield with an 18650 battery inserted, demonstrating a smartphone being charged via the USB output.

2. Setup Instructions

2.1 Battery Installation

1. Ensure the module is powered off.
2. Carefully insert a **flat-head 18650 lithium-ion battery** into the battery holder, observing the correct polarity (+ and - markings on the holder).
3. *Important Note: Using 'protected' 18650 cells (typically ~70mm long) may prevent proper fitment. 'Unprotected' 18650 cells (~65mm long) are recommended for optimal compatibility.*

2.2 Connecting Power Input (Charging)

- Connect a standard Micro USB cable to the Micro USB port on the module.
- Connect the other end of the Micro USB cable to a 5V USB power source (e.g., a computer USB port, a USB wall adapter).
- The onboard LEDs will indicate the charging status.

2.3 Connecting Output Devices

- **USB Type-A Output:** For 5V power, connect your device's USB cable to the Type-A USB port.
- **3V/5V Output Pins:** For direct power integration into DIY projects, connect to the clearly labeled 3V and 5V output pins. The 3V output provides up to 1A, and the 5V output provides up to 2A.

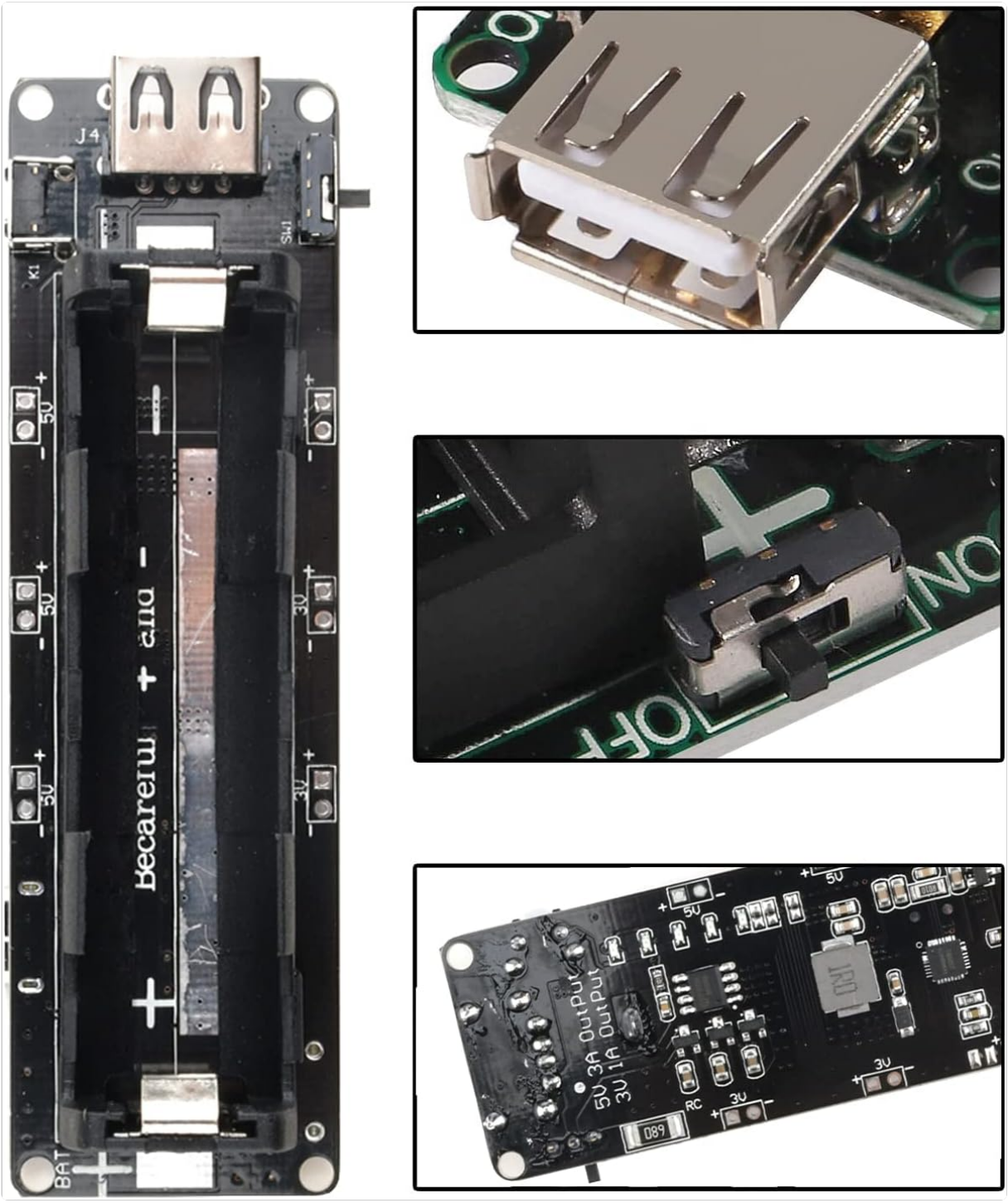

Image 2.1: A detailed view of the module's Micro USB input, Type-A USB output, and the power control switch.

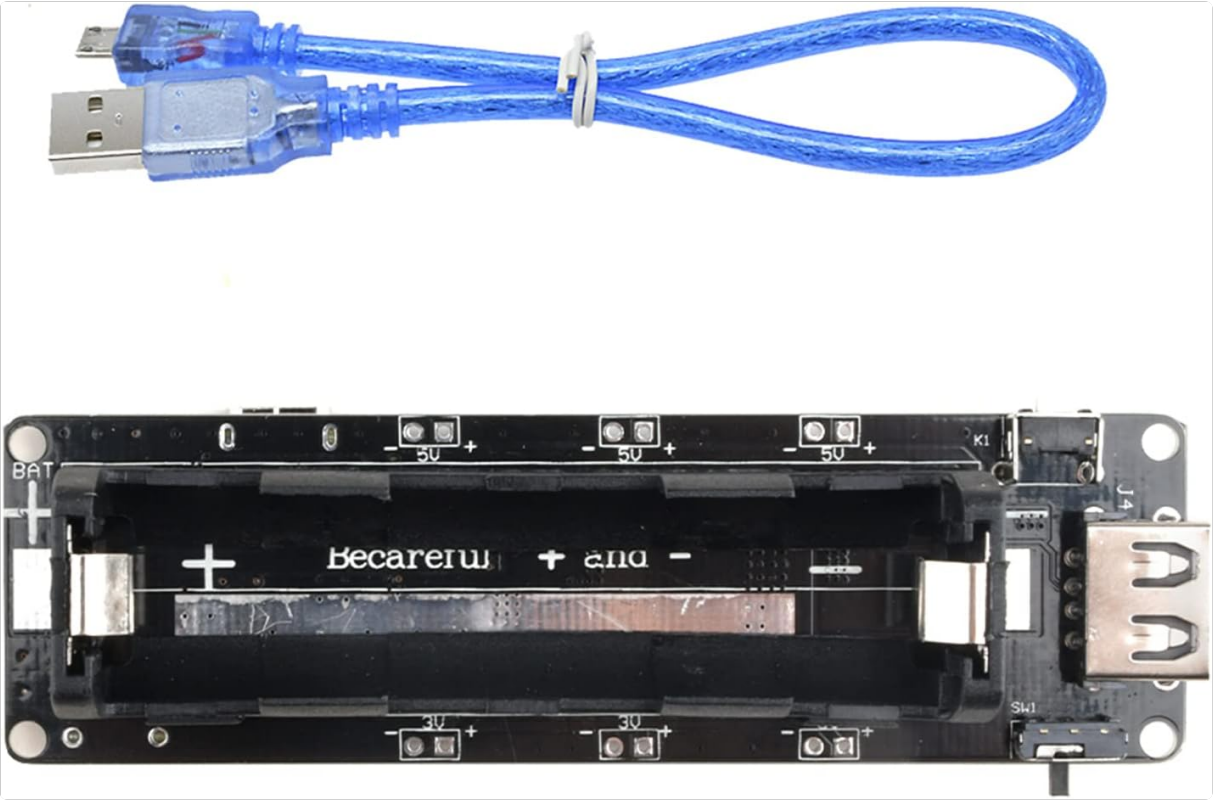

Image 2.2: Top view of the circuit board, highlighting the 3V and 5V output pins for direct project integration.

3. Operating Instructions

3.1 Powering On/Off

- The module features a single switch to control the USB output.
- To turn on the USB output, press the switch once. The indicator LEDs will illuminate.
- To turn off the USB output, press the switch twice quickly.

3.2 Charging External Devices

- With the module powered on, connect your device to the Type-A USB output port.
- The module will provide 5V/2A power to charge your device.

3.3 Charging the Module Battery

- Connect the Micro USB input to a 5V power source.
- The module will automatically begin charging the installed 18650 battery.
- Charging status is indicated by the onboard LEDs.

4. Maintenance

4.1 Battery Care

- Always use high-quality 18650 lithium-ion batteries.
- Avoid fully discharging the battery to prolong its lifespan. The module includes over-discharge protection to help prevent this.
- Store the module and battery in a cool, dry place when not in use.

4.2 Cleaning

- Use a dry, soft cloth to clean the module.
- Do not use liquid cleaners or solvents.

5. Troubleshooting

5.1 Module Not Powering On / No Output

- **Check Battery:** Ensure the 18650 battery is correctly inserted with the right polarity and is sufficiently charged.
- **Battery Type:** Verify that an 'unprotected' 18650 flat-head battery is used. 'Protected' cells may be too long.
- **Switch Operation:** Confirm the power switch is pressed once to activate the output.
- **Output Voltage:** If using 3V/5V output pins, ensure your multimeter reads the correct voltage. Some users have reported lower than expected voltages (e.g., 2.2V instead of 3V/5V) in rare cases, which may indicate a faulty unit.

5.2 Auto-Shutdown Issue (for low-power devices)

- The module may have an auto-sense feature that shuts off the unit if the current draw is below approximately 90mA for 30-35 seconds.
- This can be problematic for very low-power microcontroller projects (e.g., Arduino, Raspberry Pi) that draw less than this threshold.
- **Potential Workaround:** Some advanced users have implemented external circuits to periodically 'tickle' the enable button (pulling the enable pin low for a short duration) to reset the no-load timer. This requires additional circuitry and programming.
- *Note: The module is not designed as an uninterruptible power supply (UPS) for sensitive devices like Raspberry Pi, as it may briefly cut power during external power loss/gain, potentially causing data corruption.*

5.3 Charging Issues

- **Input Power:** Ensure the Micro USB power source is providing stable 5V.
- **Cable:** Try a different Micro USB cable to rule out cable issues.
- **Battery Health:** A severely depleted or damaged 18650 battery may not charge.

6. Specifications

Feature	Specification
Input Port	Micro USB
USB Output	Type-A USB (5V/2A)
Dedicated Outputs	3V/1A, 5V/2A
Battery Type	18650 Li-ion (flat-head recommended)
Protection	Over-charge, Over-discharge
Dimensions	4.57 x 4.09 x 0.98 inches (Package)
Item Weight	0.882 ounces
Manufacturer	diymore

Item Model Number	A1012590US

7. Warranty and Support

For warranty information or technical support, please refer to the product packaging or contact diymore customer service directly. Contact details can typically be found on the official diymore website or through your purchase platform.