ELEGOO EL-CK-003

ELEGOO Upgraded Electronics Fun Kit Instruction Manual

Model: EL-CK-003

1. Introduction

This instruction manual provides essential information for the proper use, setup, and maintenance of your ELEGOO Upgraded Electronics Fun Kit. This kit is designed to introduce users to the fundamentals of electronics and programming, offering a wide array of components compatible with Arduino and STM32 development boards. Please read this manual thoroughly before beginning any projects.

2. Product Components

The ELEGOO Upgraded Electronics Fun Kit includes over 300 components, carefully selected for educational and experimental purposes. Below is a detailed list of the contents:

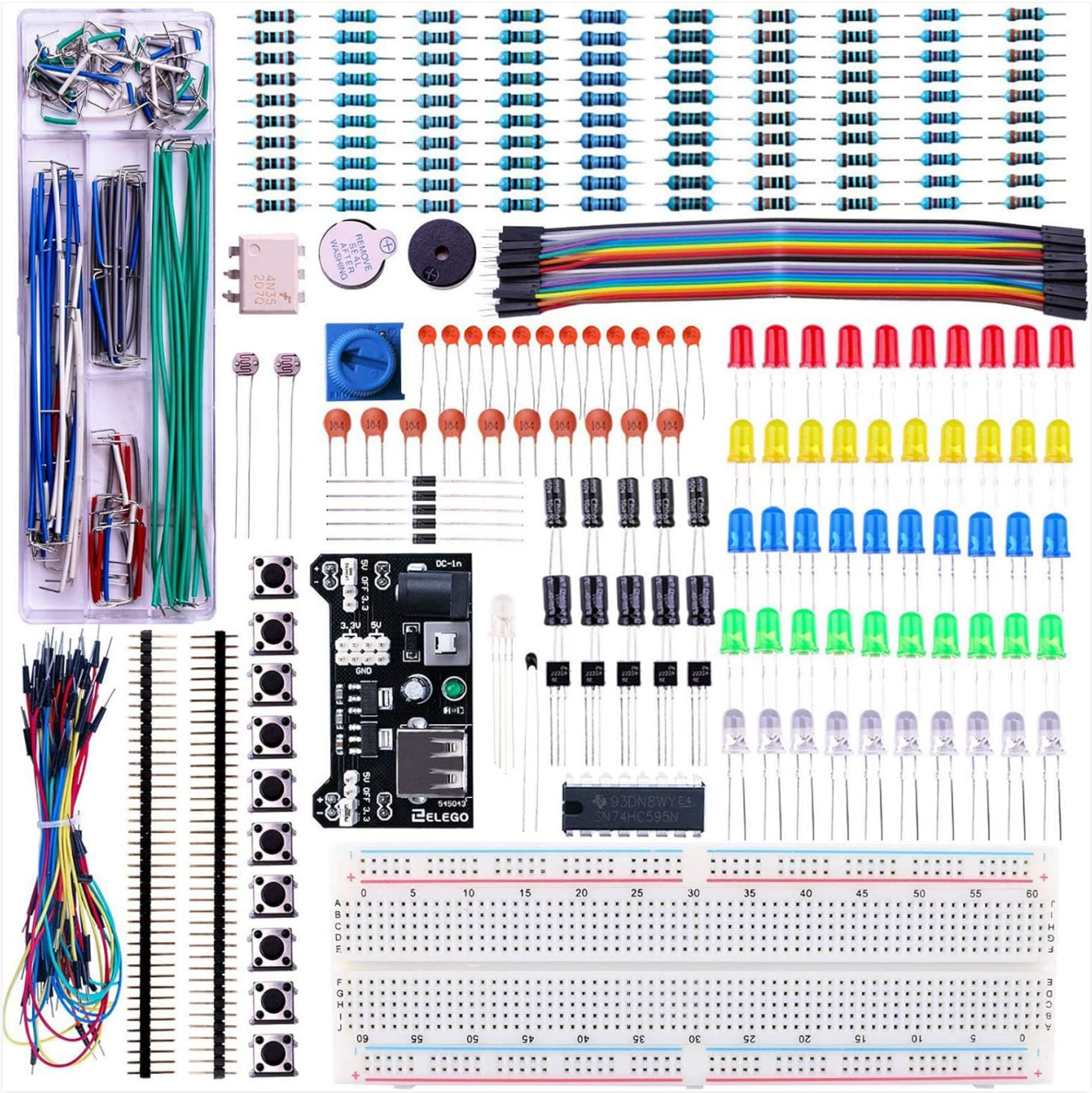

Figure 2.1: All components included in the kit.

- 1x Power Supply Module (WARNING: Do not use voltage higher than 9V)
- 1x 830 tie-points Breadboard
- 1x 65 Jumper Wire pack
- 140x Solderless Jumper Wire pack
- 20x Female-to-male Dupont Wire
- 2x Pin header (40pin)
- 1x Precision Potentiometer
- 2x Photoresistor
- 1x Thermistor
- 5x Diode Rectifier (1N4007)
- 5x NPN Transistor (PN2222)
- 1x IC 4N35
- 1x IC 74HC595
- 1x Active Buzzer
- 1x Passive Buzzer

- 10x Button (small)
- 10x 22pf Ceramic Capacitor
- 10x 104 Ceramic Capacitor
- 5x Electrolytic Capacitor (10UF 50V)
- 5x Electrolytic Capacitor (100UF 50V)
- 10x White LED
- 10x Yellow LED
- 10x Blue LED
- 10x Green LED
- 10x Red LED
- 1x RGB LED
- 10x Resistor (10R)
- 10x Resistor (100R)
- 30x Resistor (220R)
- 10x Resistor (330R)
- 10x Resistor (1K)
- 10x Resistor (2K)
- 10x Resistor (5K1)
- 10x Resistor (10K)
- 10x Resistor (100K)
- 10x Resistor (1M)

3. Setup

3.1. Power Supply Module

The kit includes a power supply module designed to provide stable 3.3V and 5V power to your breadboard projects. This module requires an external DC power adapter, which is not included in this kit.

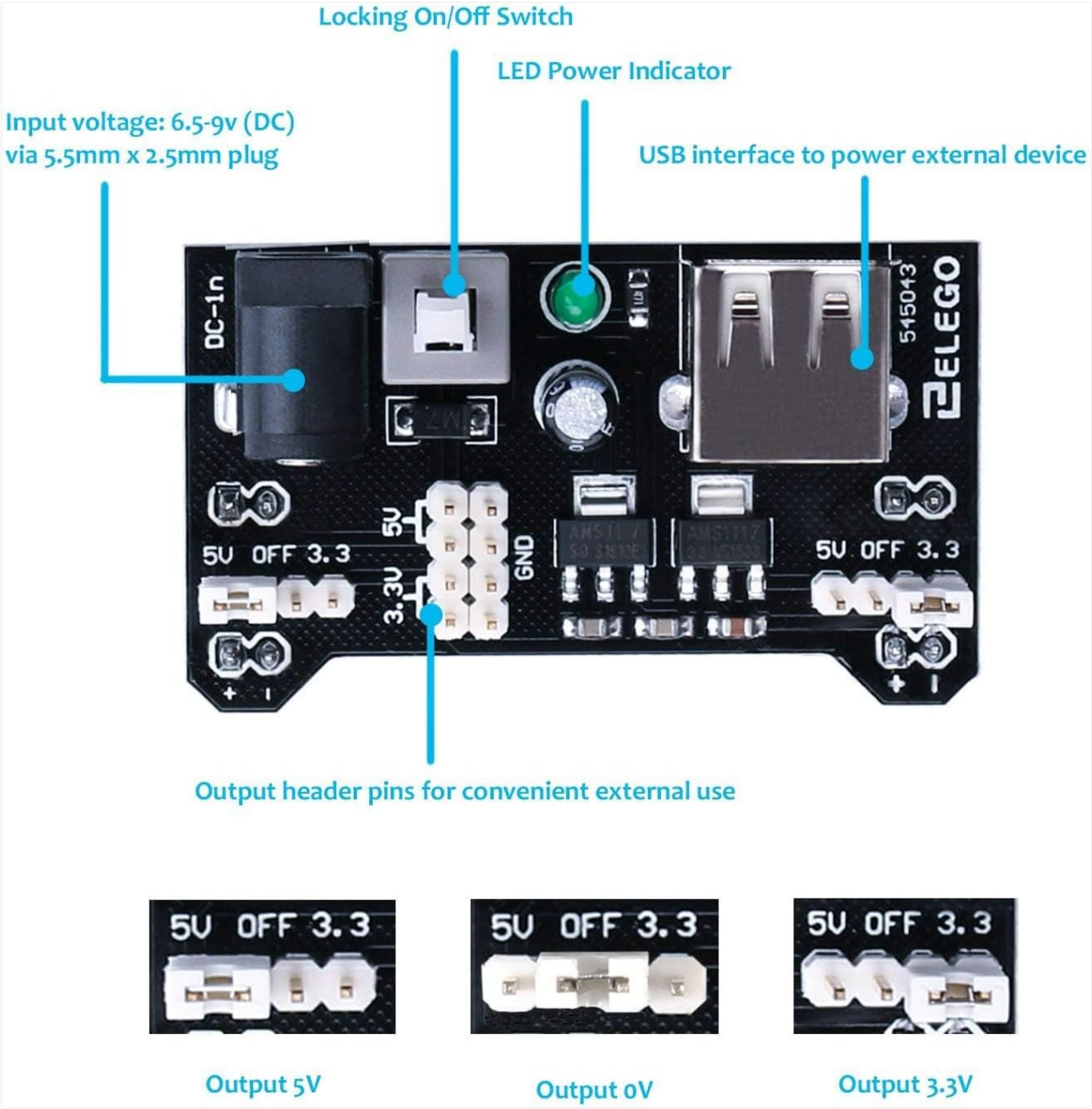

Figure 3.1: Power Supply Module overview.

Key features of the Power Supply Module:

- **Input Voltage:** 6.5-9V (DC) via 5.5mm x 2.5mm plug.
- **Locking On/Off Switch:** Controls power to the module.
- **LED Power Indicator:** Illuminates when the module is powered.
- **USB Interface:** Can be used to power external devices.
- **Output Header Pins:** Provide convenient 3.3V and 5V outputs for breadboard integration.

3.2. Power Adapter Requirements

To operate the power supply module, a compatible DC power adapter is necessary. Ensure the adapter meets the following specifications:

Figure 3.2: Power adapter specifications.

- **Output:** DC 9V 1A / 1000mA
- **Plug Size:** Outer Diameter 5.5mm, Inner Diameter 2.5mm
- **Connector Polarity:** Inside positive (+), outside negative (-)

WARNING: Do not use a power adapter with a voltage higher than 9V, as this may damage the power supply module or connected components.

4. Operating Instructions

This kit is designed for hands-on learning and experimentation. To begin, you will typically need an Arduino UNO R3 board (not included) to follow the provided tutorials and examples.

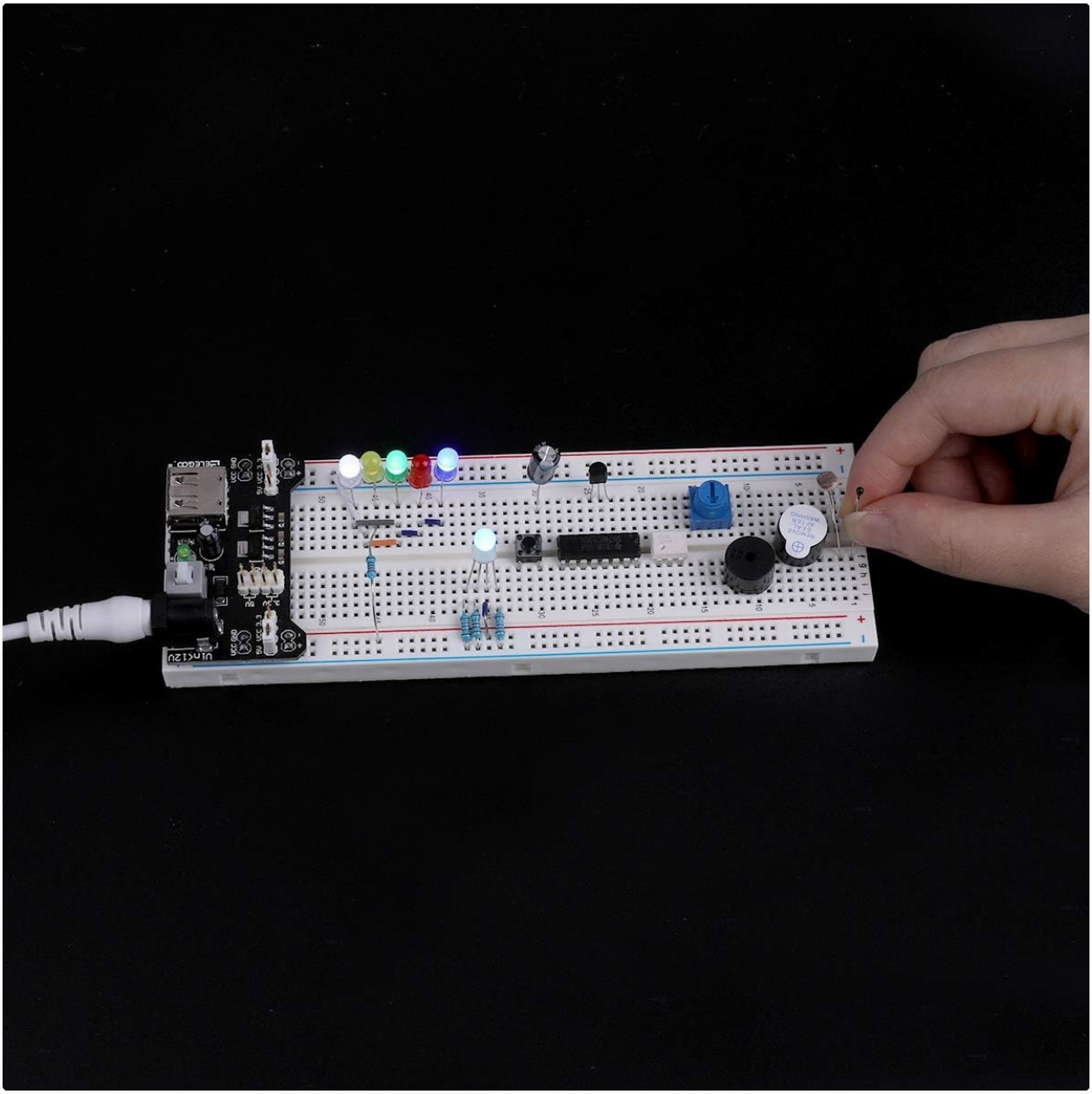

Figure 4.1: Example circuit built using the kit components.

For detailed project instructions, circuit diagrams, and code examples, please download the official datasheet and tutorial from the ELEGOO official website. These resources will guide you through various projects, from simple LED blinking to more complex sensor integrations.
When connecting components to the breadboard, ensure proper polarity for LEDs, diodes, and integrated circuits. Use the jumper wires to create connections between components and the power rails on the breadboard.

5. Maintenance

Proper maintenance ensures the longevity and functionality of your electronics kit components:

- **Storage:** Store all components in their original packaging or a dedicated electronics organizer to prevent loss and damage. Keep them in a dry, cool environment away from direct sunlight and extreme temperatures.
- **Handling:** Handle electronic components with care. Avoid bending pins excessively, and do not apply undue force when inserting components into the breadboard.
- **Cleaning:** If components become dusty, gently clean them with a soft, dry brush or compressed air. Do

not use liquids or abrasive cleaners.

- **Power Safety:** Always disconnect power before making or changing connections on the breadboard. Double-check your wiring before applying power to prevent short circuits and component damage.

6. Troubleshooting

If you encounter issues while using the kit, consider the following troubleshooting steps:

- **No Power:** Ensure the external power adapter meets the specified requirements (9V 1A, correct plug size and polarity). Check if the power supply module's switch is in the 'ON' position and the LED indicator is lit.
- **Component Not Working:** Verify all connections are secure and correctly placed on the breadboard. Check component polarity (e.g., for LEDs and diodes). Test individual components if possible.
- **Incorrect Output:** Double-check your circuit diagram against your physical setup. Ensure correct resistor values are used where necessary.
- **Software/Code Issues:** If using with an Arduino or STM32 board, ensure your code is correctly uploaded and matches the circuit. Refer to the official tutorials for debugging tips.
- **Bent Pins:** If a component has bent pins, gently straighten them with small pliers or tweezers. Be careful not to break them.

For persistent issues, consult the detailed tutorials and community forums available online, or contact ELEGOO customer support.

7. Specifications

Feature	Specification
Brand	ELEGOO
Model Name	EL-CK-003
Hardware Platform Compatibility	Arduino, STM32
Item Weight	10.2 ounces
Product Dimensions	7.3 x 3.5 x 1.7 inches
Power Supply Module Input	DC 6.5-9V (via 5.5mm x 2.5mm plug)
Power Supply Module Output	3.3V, 5V
Breadboard Tie-Points	830
Number of Components	300+

8. Warranty and Support

ELEGOO is committed to providing high-quality products and excellent customer service. While specific

warranty details are not provided in this manual, ELEGOO typically offers support for product defects and operational assistance.
For any questions, technical support, or to download the latest tutorials and datasheets, please visit the official ELEGOO website or contact their customer service team. ELEGOO maintains an after-sales service team dedicated to providing quick support.
You can often find additional resources and community support through online forums and educational platforms dedicated to Arduino and electronics.