

MiOYOOW GY20795

MiOYOOW 4-Digit Rechargeable DIY Digital Clock Kit Instruction Manual

Model: GY20795

1. INTRODUCTION

This manual provides comprehensive instructions for the assembly, operation, and maintenance of the MiOYOOW 4-Digit Rechargeable DIY Digital Clock Kit (Model: GY20795). This kit is designed for enthusiasts interested in electronics and soldering, particularly those looking to practice Surface Mount Device (SMD) soldering. Upon successful assembly, the clock displays time, date, week, and temperature, and includes dual alarm functions.

2. PRODUCT OVERVIEW AND FEATURES

The MiOYOOW Digital Clock Kit (TJ-56-619) is a versatile 4-bit digital electronic clock designed for DIY assembly. It offers a range of functionalities suitable for home or office environments.

- **Light-controlled Temperature Clock:** Displays current date, time (24-hour format), week, and real-time temperature. Includes stopwatch and countdown modes.
- **SMD Soldering Practice:** Provides an opportunity to practice challenging surface mount electronics soldering, enhancing electronic assembly skills.
- **Dual Power Supply:** Operates via USB charging or a 3.7V 14500 Lithium battery (not included), ensuring functionality during power outages.
- **Adjustable Brightness:** Features light-controlled automatic brightness adjustment, with manual control offering 1-15 levels.
- **Multiple Functions:**
 - Two-way Alarm Clock: Supports setting two independent alarms.
 - Power Saving Mode: Allows extinguishing the LED display to conserve power.
 - Hourly Chime: Buzzer prompt 5 times on the hour.
 - Motor Vibration: Provides vibration feedback when buttons are pressed.

Upgraded Functions Compared with Other Clock

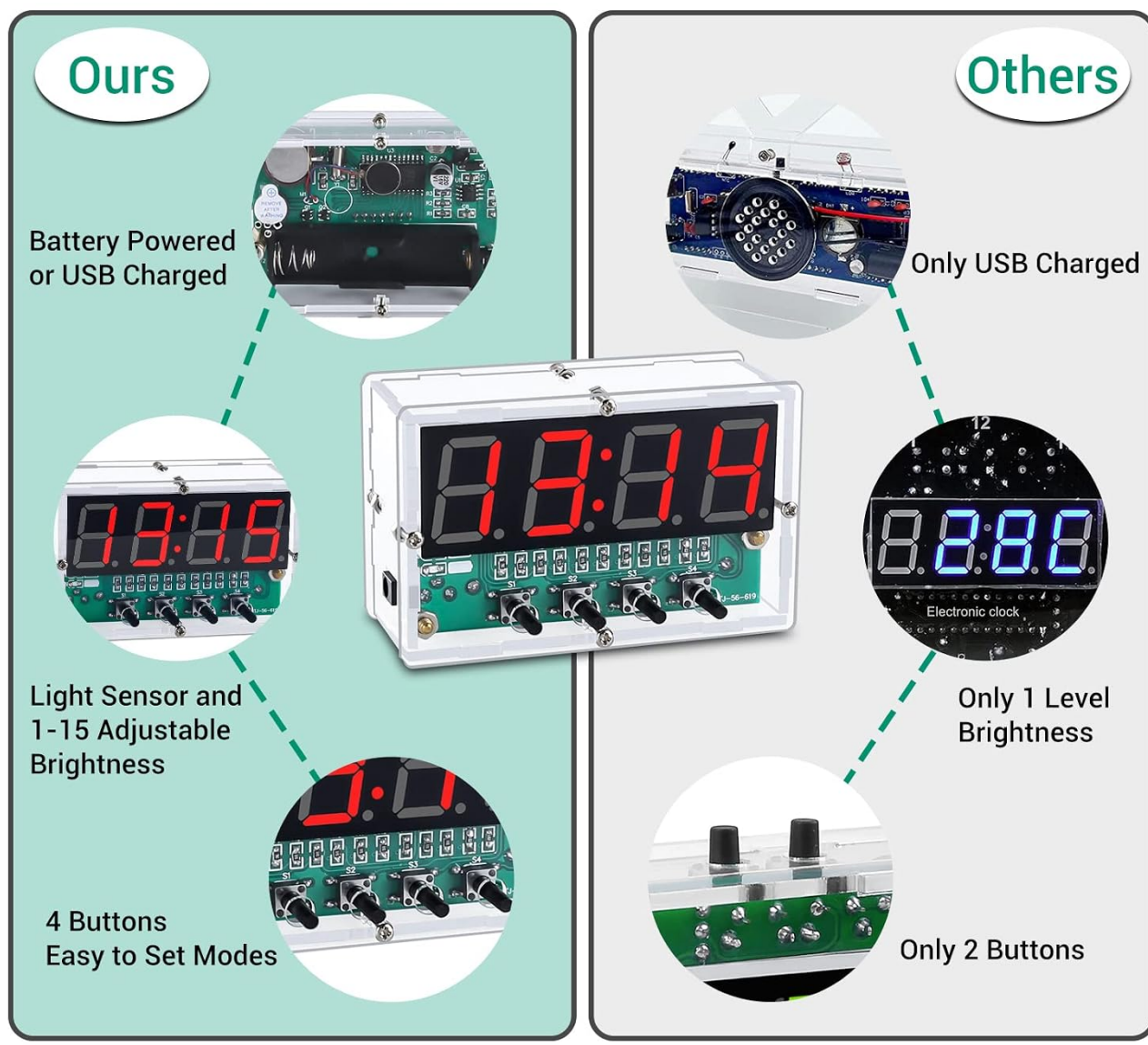


Image 2.1: Comparison highlighting the MiOYOOW clock's features, including battery/USB power, 1-15 level adjustable brightness, and 4 control buttons.

3. PACKAGE CONTENTS

The MiOYOOW 4-Digit Rechargeable DIY Digital Clock Kit includes all necessary electronic components and acrylic casing parts for assembly.

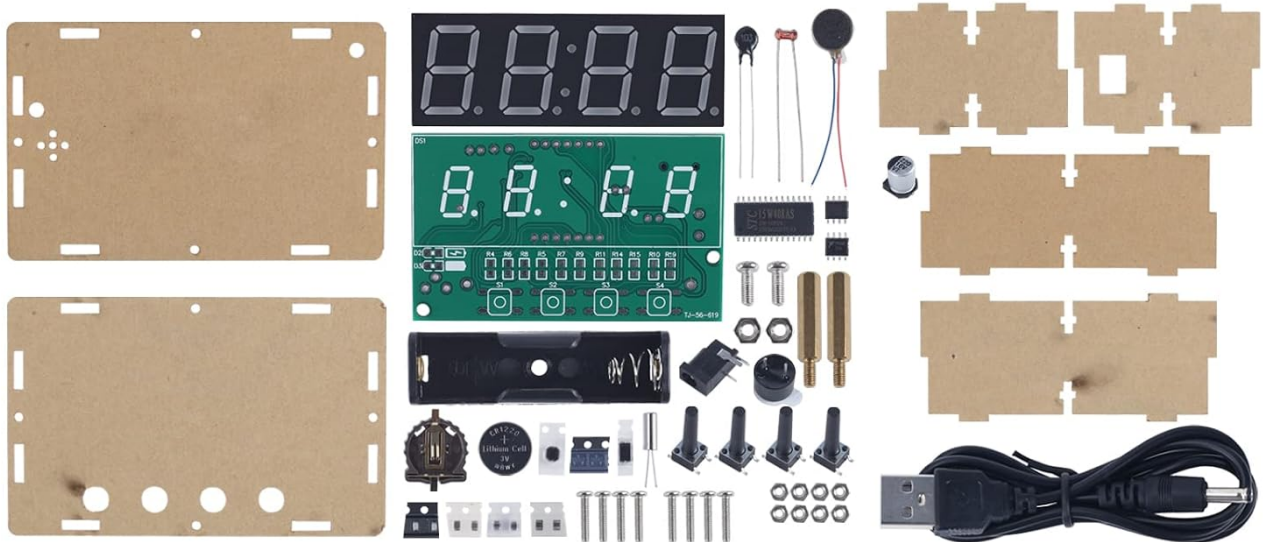


Image 3.1: Overview of the MiOYOOOW Digital Clock Kit, showing the assembled clock and all individual components including the PCB, acrylic casing parts, electronic components, and USB cable.

Please verify that all components are present before beginning assembly.

- Main Printed Circuit Board (PCB)
- 4-Digit LED Display Module
- Acrylic Casing Panels and Fasteners
- Various SMD and Through-Hole Electronic Components (resistors, capacitors, ICs, crystal oscillator, photodiode, temperature sensor, buzzer, motor, etc.)
- Control Buttons (S1, S2, S3, S4)
- USB Charging Cable
- Battery Holder (for 3.7V 14500 Lithium battery, battery not included)
- Paper English Instruction Manual (with QR code for PDF download)

4. ASSEMBLY AND SETUP

This DIY kit requires soldering, particularly of Surface Mount Devices (SMD). Prior experience with electronics and soldering is highly recommended.

4.1 Required Tools (Not Included)

- Soldering Iron with fine tip
- Solder (preferably thin for SMD components)
- Flux or Soldering Paste
- Desoldering Braid or Pump
- Precision Tweezers
- Magnifying Glass or Microscope (highly recommended for SMD)
- Multimeter (for testing connections)
- Safety Glasses

4.2 Assembly Steps

For detailed, step-by-step assembly instructions, please refer to the PDF manual. A QR code for downloading the PDF is provided in the paper instruction manual included with your kit.

1. **Download Instructions:** Scan the QR code on the paper manual to access the detailed PDF assembly guide. Review all steps before starting.
2. **Component Identification:** Carefully identify all components. Note that some components, especially resistors, may have very small markings. Refer to the schematic diagram and component layout provided in the PDF.
3. **SMD Soldering:** Begin by soldering the smallest SMD components first, progressing to larger ones. Pay close attention to component orientation (e.g., ICs, diodes).
4. **Through-Hole Components:** Solder any through-hole components such as the LED display, buttons, and battery holder.
5. **Testing:** Periodically test connections and component functionality if possible, as per the PDF guide, to identify errors early.
6. **Casing Assembly:** Once all electronic components are soldered and tested, assemble the acrylic casing around the PCB using the provided fasteners.

Product Details

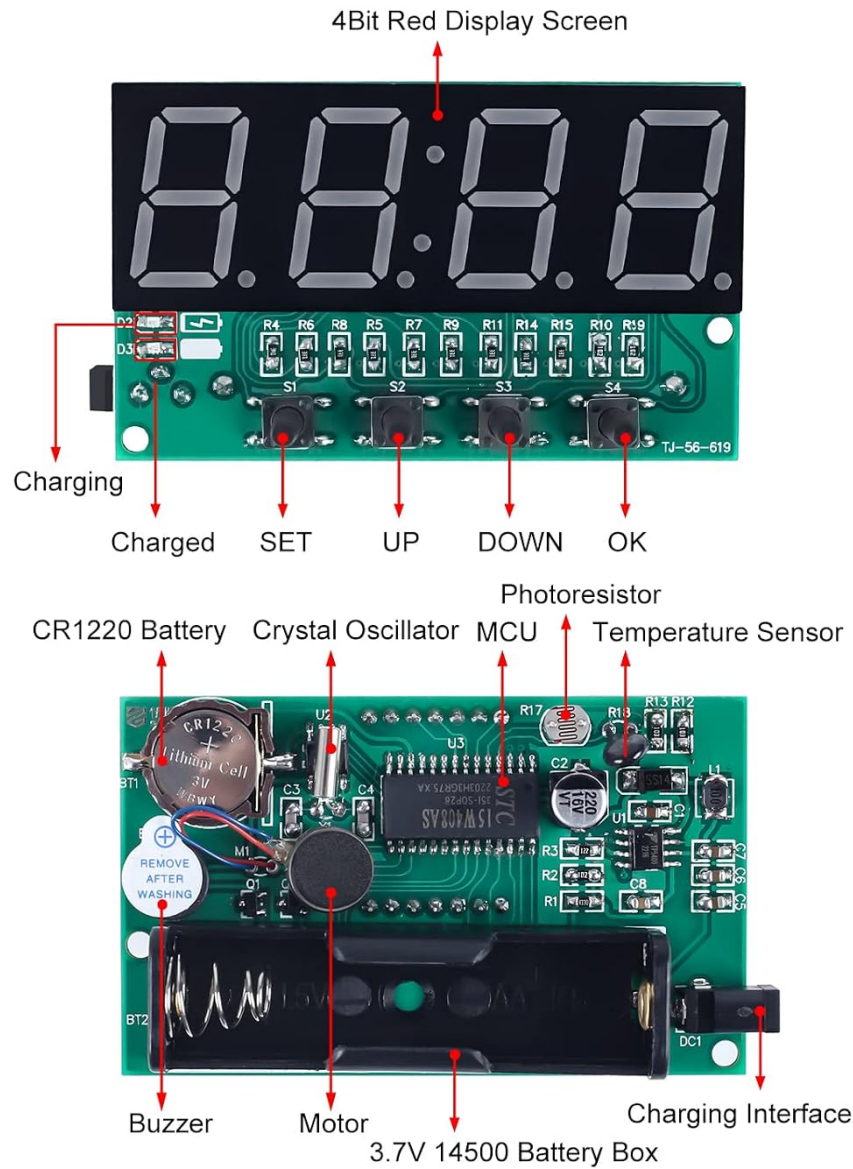


Image 4.1: Detailed view of the clock's Printed Circuit Board (PCB), showing key components such as the charging port, control buttons (SET, UP, DOWN, OK), photodiode, crystal oscillator, MCU, temperature sensor, buzzer, motor, and 3.7V 14500 battery box.

Schematic Diagram

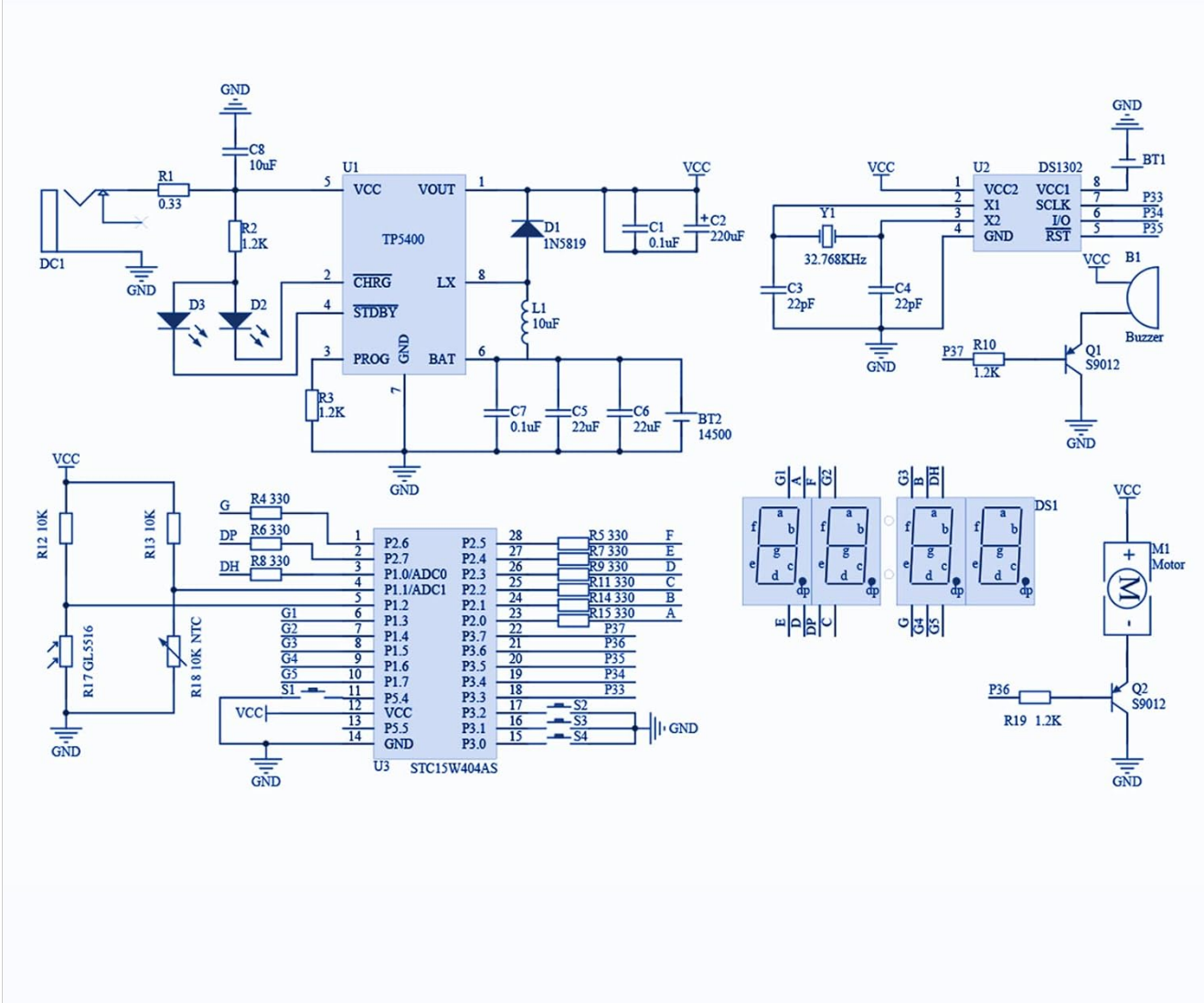


Image 4.2: Electronic schematic diagram for the MiOYOOW Digital Clock Kit, illustrating the connections and components of the circuit.

4.3 Powering the Clock

The clock can be powered in two ways:

- **USB Power:** Connect the provided USB cable to the clock's charging interface and a standard USB power adapter (5V).
- **Battery Power:** Insert a 3.7V 14500 Lithium rechargeable battery (not included) into the battery holder. Ensure correct polarity. The clock will charge the battery when connected via USB.

5. OPERATING INSTRUCTIONS

The clock features four control buttons (S1, S2, S3, S4) for navigation and setting. These are typically labeled as SET, UP, DOWN, and OK on the PCB.

Multifunctional 4-Digit Digital Clock



4 Display Modes



Stopwatch



Countdown



2 Alarm Clock



Hourly Chime



Date



Week



Year



Temperature

Image 5.1: The multifunctional 4-digit digital clock displaying different modes: Date, Week, Year, and Temperature.

5.1 Basic Navigation

- **SET Button (S1):** Enters setting mode or confirms selections.
- **UP Button (S2):** Increases values or navigates upwards in menus.
- **DOWN Button (S3):** Decreases values or navigates downwards in menus.
- **OK Button (S4):** Confirms settings or switches display modes.

5.2 Setting Time and Date

1. Press the **SET** button to enter time setting mode. The hour digits will flash.
2. Use the **UP** and **DOWN** buttons to adjust the hour.
3. Press **SET** again to move to minutes, then adjust with **UP/DOWN**.
4. Continue pressing **SET** to cycle through setting year, month, day, and week.
5. Press **OK** to save settings and exit.

5.3 Alarm Settings

The clock supports two independent alarms.

1. From the main display, press the **OK** button repeatedly until "AL1" or "AL2" appears.
2. Press **SET** to enter alarm setting mode.
3. Adjust the alarm hour and minute using **UP/DOWN**, confirming with **SET**.
4. Enable or disable the alarm (ON/OFF) using **UP/DOWN**.
5. Press **OK** to save and exit.

5.4 Brightness Adjustment

The clock features automatic brightness adjustment via a light sensor. You can also manually adjust it.

- Press a specific button (refer to PDF manual for exact button, likely **UP** or **DOWN** outside of setting mode) to cycle through brightness levels (1-15) or enable/disable auto-brightness.

5.5 Other Modes

- **Display Modes:** Press the **OK** button to cycle through different display modes: Time, Date, Week, Year, Temperature.
- **Power Saving Mode:** Press the **S4** (OK) button to extinguish the LED display and save electricity when not in use. Press any button to reactivate.
- **Stopwatch/Countdown:** Refer to the detailed PDF manual for instructions on activating and using stopwatch and countdown functions.

6. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your digital clock.

- **Cleaning:** Use a soft, dry cloth to clean the acrylic casing and LED display. Avoid abrasive cleaners or solvents.
- **Battery Care:** If using battery power, ensure you use a compatible 3.7V 14500 Lithium rechargeable battery. If the clock is not used for extended periods, it is advisable to remove the battery.
- **Environment:** Keep the clock in a dry environment, away from direct sunlight, extreme temperatures, and high humidity.
- **Avoid Impact:** The acrylic casing, while durable, can crack under severe impact. Handle with care.

7. TROUBLESHOOTING

If you encounter issues with your MiOYOOOW Digital Clock Kit, refer to the following common problems and solutions.

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Clock does not power on.	◦ Loose power connection. ◦ Incorrect battery polarity or dead battery. ◦ Soldering error (e.g., short circuit, cold joint). ◦ Missing or incorrect component.	◦ Ensure USB cable is securely connected and power source is active. ◦ Check battery insertion and charge level. ◦ Inspect all solder joints for continuity and shorts. Refer to the schematic (Image 4.2) and component layout. ◦ Verify all components are correctly placed and soldered.
Clock displays incorrect time or time drifts significantly.	◦ Issue with the crystal oscillator. ◦ Software/firmware issue (less likely for DIY kit).	◦ Carefully inspect the soldering of the crystal oscillator (32.768KHz). Re-solder if necessary. ◦ Ensure no external interference is affecting the clock's timing.
Rapid battery drain when unplugged.	◦ High current draw from components. ◦ Faulty battery or charging circuit. ◦ Short circuit on the PCB.	◦ Ensure Power Saving Mode is utilized when not actively viewing the display. ◦ Test the battery with a multimeter. Inspect the charging circuit components for proper soldering. ◦ Thoroughly check the PCB for any unintended solder bridges or component shorts.
Display is dim or not adjusting brightness.	◦ Faulty photodiode/light sensor. ◦ Incorrect soldering of LED display or associated resistors.	◦ Inspect the photodiode and its connections. ◦ Check all connections to the LED display and ensure resistors are correctly valued and soldered.
Buttons are unresponsive.	◦ Poor soldering of buttons. ◦ Buttons are faulty.	◦ Re-solder the button connections. ◦ Ensure the buttons click properly and are not stuck.
Received incorrect or missing components (e.g., resistor values).	◦ Packaging error.	◦ Contact MiOYOOW customer support or the seller for replacement parts. ◦ Do not attempt to substitute components unless you are certain of compatibility and electrical characteristics.

8. SPECIFICATIONS

Brand	MiOYOOW
Model Number	GY20795
Display Type	4-Digit LED
Power Supply	USB (5V) or 3.7V 14500 Lithium Battery (not included)
Material Type	Acrylic (Casing)
Functions	Time, Date, Week, Temperature, Dual Alarm, Stopwatch, Countdown, Hourly Chime, Power Saving Mode
Brightness Control	Light-controlled automatic adjustment, 1-15 manual levels
Assembly Required	Yes (Soldering of SMD and through-hole components)
Package Dimensions	11.2 x 7.7 x 3.99 cm
Item Weight	109 g
Educational Objective	Electronics Skills, Soldering, Time Measurement, Temperature Measurement

9. WARRANTY AND SUPPORT

As a DIY kit, the successful operation of the MiOYOOW Digital Clock largely depends on the accuracy of assembly and soldering. While specific warranty details for individual components are not provided, MiOYOOW aims to ensure customer satisfaction.

- **Missing or Incorrect Parts:** If you find any components missing or incorrect upon opening the package, please contact the seller or MiOYOOW customer support immediately for assistance.
- **Technical Support:** For assembly guidance beyond the provided manual or troubleshooting persistent issues, refer to online communities for DIY electronics or contact MiOYOOW support channels if available.
- **Returns/Replacements:** Please refer to the retailer's return policy for information regarding returns or replacements of the kit.