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IS GY20384

FM Radio Kit User Manual

Model: GY20384 | Brand: IS

Introduction

This user manual provides comprehensive instructions for the assembly, operation, and maintenance of your ICSTATION FM Radio Kit. Designed as a soldering project, this kit offers an engaging and educational experience for electronics enthusiasts, resulting in a functional FM radio with an LCD display and colorful LED lights. Please read this manual thoroughly before beginning assembly.

What's in the Box

Your FM Radio Kit includes all necessary components for assembly. Please verify all parts are present before starting.

- Printed Circuit Board (PCB)
- LCD1602 Display Module
- Acrylic Transparent Case Panels
- Speaker
- Telescopic Antenna
- Various Electronic Components (Resistors, Capacitors, Diodes, Integrated Circuits, Transistors, etc.)
- LED Lights
- Buttons and Knobs
- USB Power Cable
- Fasteners (Screws, Nuts)

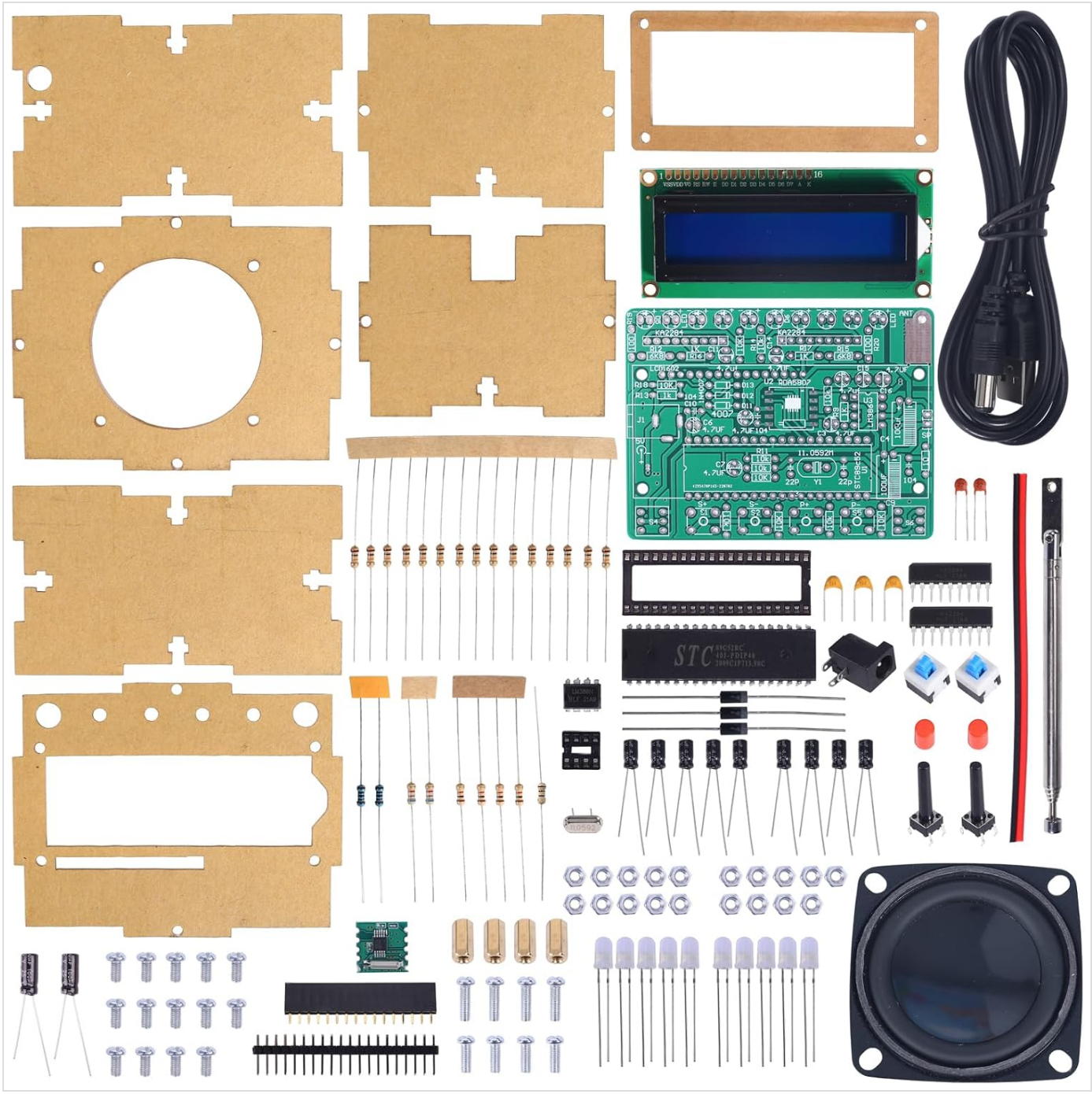

Figure 1: Contents of the FM Radio Kit.

Specifications

Feature	Detail
Product Dimensions	1.9 x 0.78 x 1.18 inches (assembled)
Item Weight	9.6 ounces
Model Number	GY20384
Recommended Age	15 years and up
Tuner Technology	FM (87-108MHz)
Display Type	LCD1602

Special Features	LED Flashing Lights, DIY Soldering Project
Power Source	DC (via USB cable)

Safety Information

This kit involves soldering, which requires caution. Please observe the following safety guidelines:

- Always use a soldering iron in a well-ventilated area.
- Wear appropriate eye protection to shield against solder splashes or fumes.
- Ensure the soldering iron is placed on a heat-resistant stand when not in use.
- Avoid touching the hot tip of the soldering iron or freshly soldered components.
- Keep flammable materials away from your soldering workspace.
- This product is recommended for ages 15 and up due to the nature of the assembly process. Adult supervision is advised for younger users.
- Do not apply power to the circuit board until all components are correctly soldered and the assembly is complete.

Assembly Instructions

The assembly of this FM Radio Kit requires basic soldering skills. Detailed step-by-step instructions, including a circuit schematic, are provided in the official user manual PDF. It is highly recommended to refer to this document for precise component placement and soldering techniques.
You can access the detailed English manual by scanning the QR code below or visiting the provided link:



Figure 2: Schematic Diagram and QR Code for the English Manual.

Official English Manual Link

General Assembly Steps:

1. **Component Identification:** Before soldering, identify all components using the provided parts list and schematic. Pay attention to component values and polarity (for diodes, LEDs, electrolytic capacitors, and integrated circuits).
2. **Soldering Components:** Solder components onto the PCB, starting with smaller components like resistors and diodes, then moving to larger ones such as capacitors, IC sockets, and connectors. Ensure strong, clean solder joints and avoid bridging connections.
3. **LCD and LED Installation:** Carefully install the LCD1602 display and the LED light bar onto their respective headers on the PCB.
4. **Speaker and Antenna Connection:** Connect the speaker and telescopic antenna to the designated points on the PCB.
5. **Case Assembly:** Once all electronic components are soldered and verified, assemble the acrylic transparent case around the circuit board. Follow the case assembly diagrams in the manual to ensure proper alignment and secure fastening with screws and nuts.



Figure 3: Example of soldering during assembly.

Assembly Overview Video:

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Video 1: A brief overview of the Soldering Project Radio Kit, demonstrating its assembly and features.

Operating Instructions

Once assembled, your FM Radio Kit is ready for operation. Ensure it is connected to a stable 5V DC power source via the provided USB cable.

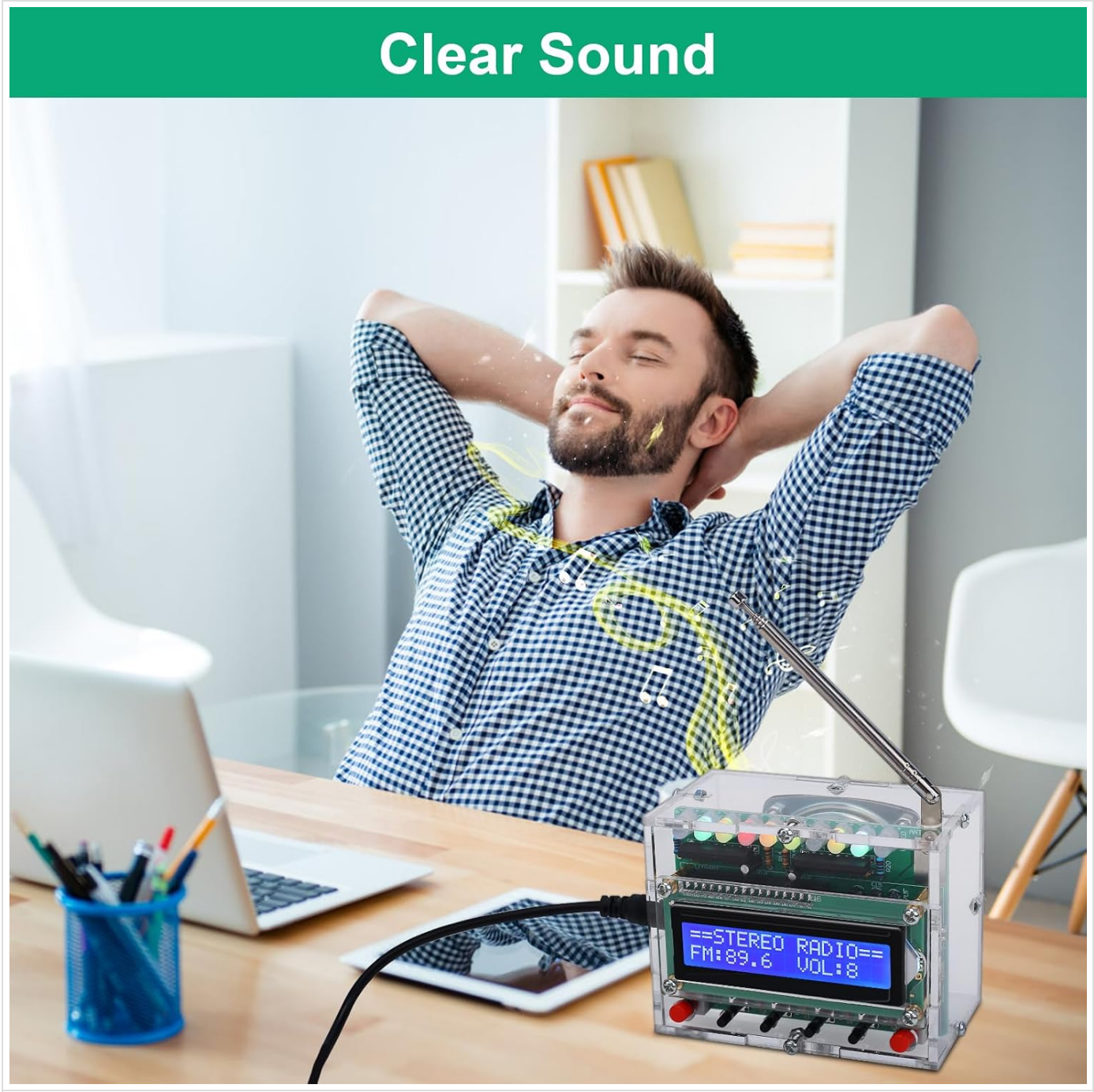

Figure 4: Connecting the USB power cable.

Basic Functions:

- **Power On:** Connect the USB power cable to a 5V power source (e.g., USB wall adapter, power bank). The LCD display should light up, and the radio will power on.
- **Antenna Adjustment:** Extend the telescopic antenna for optimal FM signal reception. The antenna is approximately 10 inches when fully extended.
- **Frequency Tuning:** Use the designated buttons (usually marked with arrows or frequency symbols) to adjust the FM frequency. The current frequency will be displayed on the LCD screen.
- **Volume Control:** Use the volume buttons to increase or decrease the audio output. The volume level will be shown on the LCD display.
- **LED Lights:** The integrated LED lights will flash in various colors and synchronize with the rhythm of the music, enhancing the visual experience.

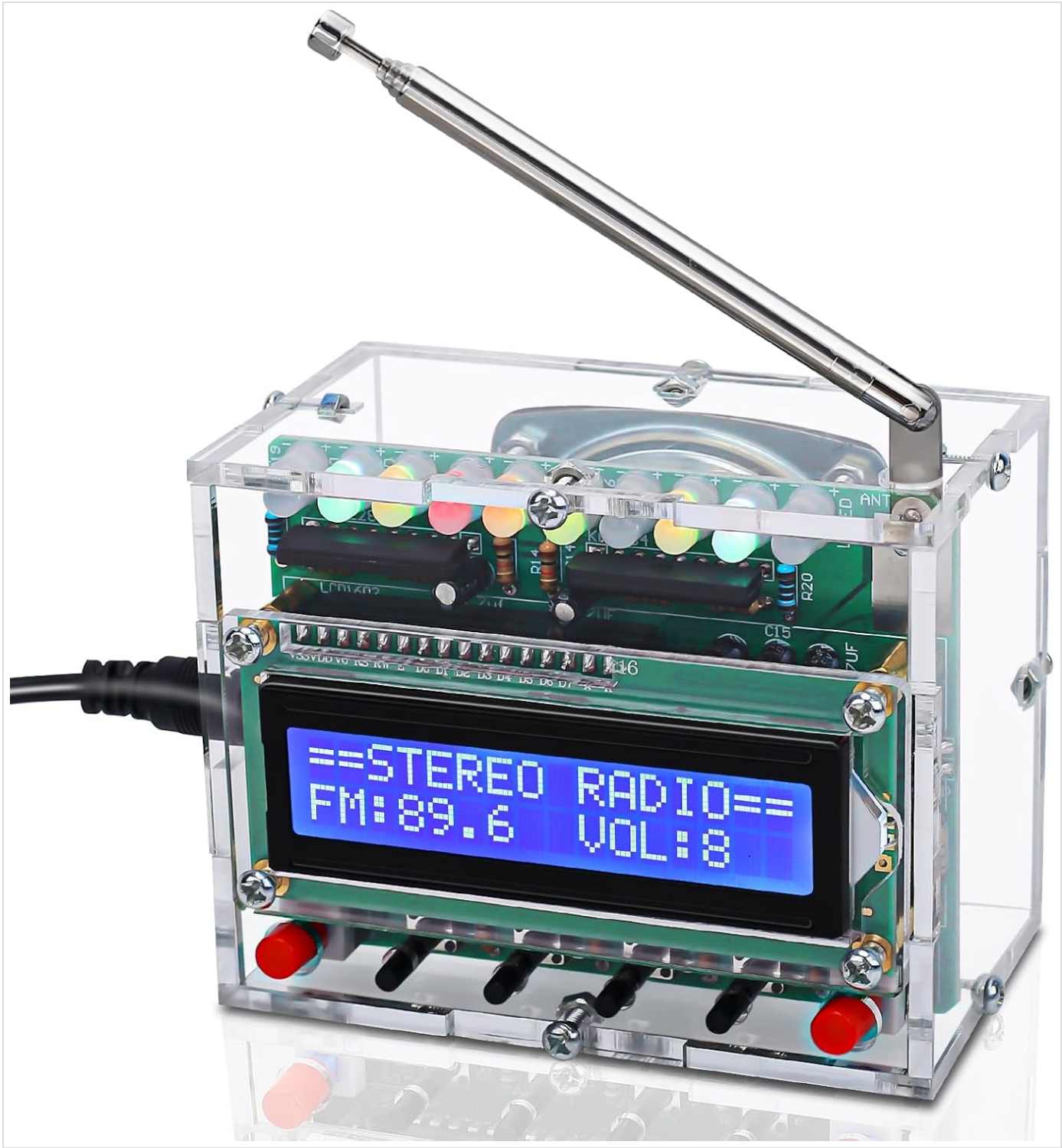

Figure 5: Assembled FM Radio Kit in operation.

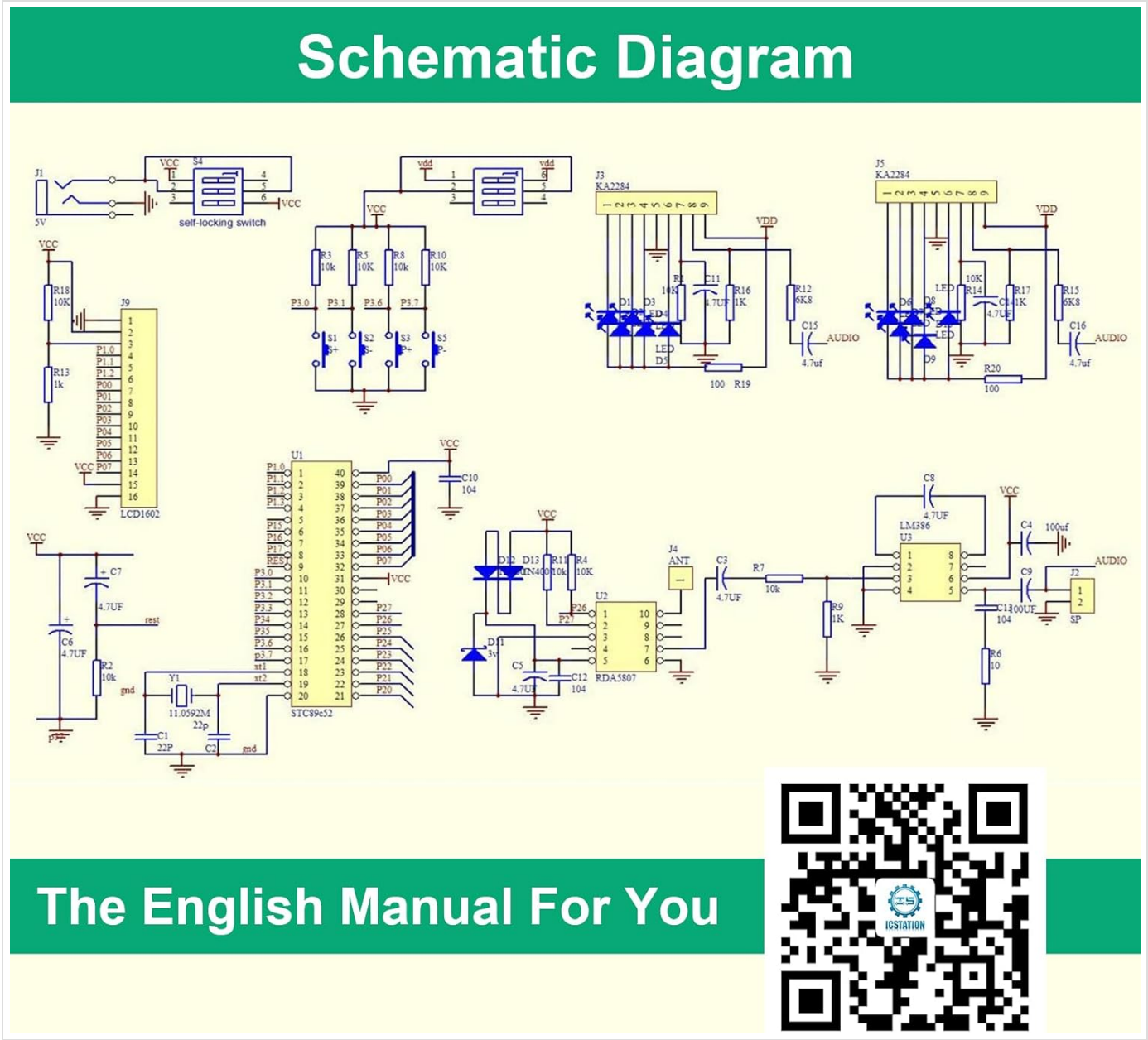

Figure 6: Clear display of frequency and volume on the LCD screen.



Figure 7: Colorful LED lights in action.

Maintenance

To ensure the longevity and optimal performance of your FM Radio Kit, follow these simple maintenance tips:

- **Cleaning:** Use a soft, dry cloth to wipe down the acrylic case. Avoid abrasive cleaners or solvents that could damage the plastic.
- **Storage:** Store the radio in a cool, dry place away from direct sunlight, extreme temperatures, and high humidity.
- **Handling:** Handle the assembled radio with care to avoid damaging internal components or the antenna.

Troubleshooting

If you encounter any issues with your FM Radio Kit, please refer to the following common troubleshooting steps:

Problem	Possible Cause / Solution

Radio does not power on / LCD is blank.	◦ Ensure the USB power cable is securely connected to both the radio and a functional 5V power source. ◦ Check all power-related solder joints on the PCB for cold joints or bridges. ◦ Verify the LCD module is correctly seated in its header.
No sound or poor reception.	◦ Extend the telescopic antenna fully. ◦ Adjust the radio frequency to find a strong local station. ◦ Check the speaker connections and ensure it is properly soldered. ◦ Inspect all solder joints related to the radio module and antenna for proper connection. ◦ Ensure no short circuits on the PCB.
Buttons do not respond or function incorrectly.	◦ Verify that the buttons are correctly soldered and not shorted. ◦ Ensure the button caps are properly aligned and not stuck. ◦ Note that some versions may have slightly different button layouts; refer to the official PDF manual for specific details.
LED lights are not working or flashing incorrectly.	◦ Check the polarity of the LEDs during soldering (long leg is positive). ◦ Inspect solder joints for the LED bar.

For more detailed troubleshooting or if the issue persists, please refer to the comprehensive official user manual PDF or contact ICSTATION customer support.

Warranty and Support

ICSTATION is committed to providing high-quality products and customer satisfaction. While this is a DIY kit, if you encounter any manufacturing defects or require assistance with assembly beyond the scope of this manual, please contact ICSTATION customer support through the platform where you purchased the product. Please note that issues arising from incorrect assembly or mishandling are not covered under warranty.
For additional resources and product information, visit the official ICSTATION store:ICSTATION Amazon Store.

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