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› VIGURTIME AM/FM Radio Kit Instruction Manual

## VIGURTIME VT-16

# VIGURTIME AM/FM Radio Kit Instruction Manual

Model: VT-16

## 1. INTRODUCTION

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The VIGURTIME VT-16 AM/FM Radio Kit is designed as an educational and engaging DIY soldering project. It provides a hands-on opportunity to learn about electronics, radio schematics, and soldering techniques. Upon successful assembly, you will have a functional AM/FM stereo radio with enhanced reception capabilities.

This manual provides comprehensive instructions for assembling and operating your radio kit. Please read all sections carefully before beginning the assembly process.

## 2. SAFETY INFORMATION

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**Warning:** This kit involves soldering, which requires the use of a hot soldering iron and can produce fumes. Always work in a well-ventilated area and wear appropriate safety gear, including safety glasses. Keep out of reach of small children. Recommended age for assembly is 14 years and up.

- Ensure your workspace is clean, well-lit, and free of flammable materials.
- Use a soldering iron with proper temperature control (around 350°C recommended).
- Always use lead-free solder with flux.
- Disconnect power when not actively soldering or when making adjustments.
- Allow components to cool before handling.

## 3. COMPONENTS OVERVIEW

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Your VIGURTIME VT-16 AM/FM Radio Kit includes the following main components:

- Printed Circuit Board (PCB)
- Various electronic components (resistors, capacitors, IC chips, diodes, etc.)
- Two 8Ω1W speakers
- AM magnetic rod antenna (4.7"/120mm)
- Retractable FM antenna (13.7"/350mm)

- Battery holder (for 3 AA batteries, batteries not included)
- DC 5V plug cable for alternative power
- Full-color A3 size paper instruction manual

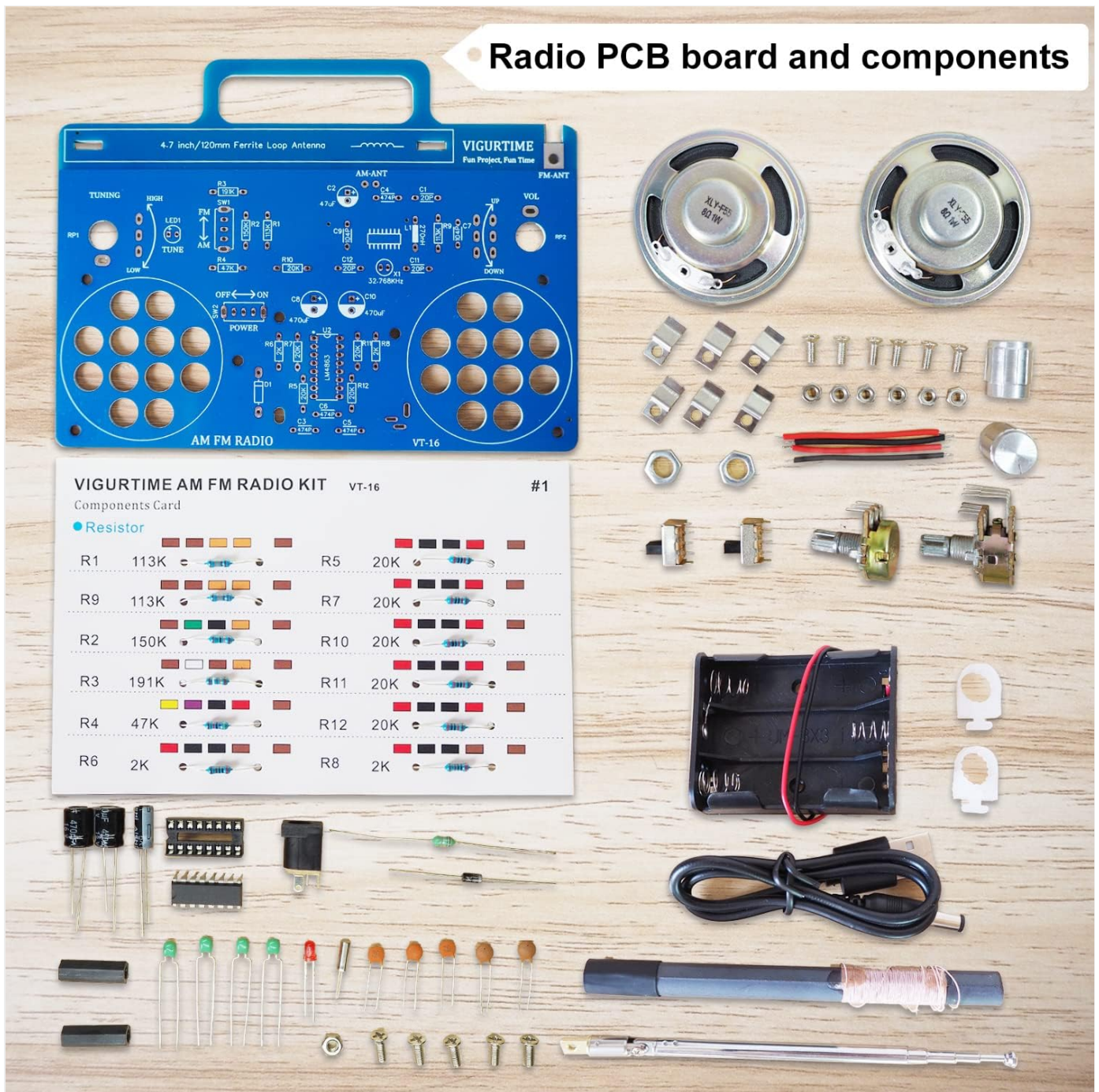


Image: All components of the VIGURTIME VT-16 AM/FM Radio Kit, including the PCB, various electronic parts, speakers, and antennas, laid out for assembly.

## 4. ASSEMBLY INSTRUCTIONS

The assembly process involves soldering various electronic components onto the PCB. Refer to the included full-color paper instruction manual for detailed, step-by-step guidance, including component identification and placement diagrams.

### 4.1. Preparation

- Unpack all components and verify against the parts list in your manual.
- Prepare your soldering station with a heated soldering iron, solder, desoldering braid (optional), and side cutters.
- Familiarize yourself with the PCB layout and component markings. The 16x12cm PCB board features clear marks

and circuit traces for easy identification.

## 4.2. Soldering Steps (General Order)

Follow the sequence provided in your paper manual. Generally, it is recommended to solder smaller components first, then larger ones.

1. **Resistors and Diodes:** Insert and solder all resistors and diodes according to their marked positions and values. Pay attention to diode polarity.
2. **Capacitors:** Solder ceramic and electrolytic capacitors. Note the polarity for electrolytic capacitors.
3. **Integrated Circuits (ICs):** Carefully insert and solder the IC chips. Ensure correct orientation (notch or dot on IC matches the marking on the PCB).
4. **Switches and Potentiometers:** Solder the power switch, AM/FM mode switch, tuning potentiometer, and volume potentiometer.
5. **Speakers:** Attach and solder the two 8Ω1W speakers to their designated pads. Ensure the small white rubber rings are placed under the speaker-mount-clip screws to protect the PCB.
6. **Antennas:** Solder the AM magnetic rod antenna and the retractable FM antenna. The AM antenna is 4.7" (120mm) long for better reception, and the FM antenna is 13.7" (350mm) and retractable.
7. **Battery Holder and DC Jack:** Solder the battery holder wires and the DC 5V power input jack.
8. **Final Checks:** Inspect all solder joints for cold joints or bridges. Trim any excess component leads.



Image: The fully assembled VIGURTIME VT-16 AM/FM Radio Kit, showcasing its blue PCB, integrated components, speakers, and extended antennas.



Image: Rear view of the assembled radio, highlighting the battery compartment for 3 AA batteries and the DC 5V plug input for alternative power.

## 5. OPERATING INSTRUCTIONS

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### 5.1. Powering On

- Insert 3 AA batteries into the battery holder, observing correct polarity. Alternatively, connect a DC 5V power supply to the DC input jack.
- Flip the power switch (SW2) to the "ON" position. The power indicator LED should illuminate.

### 5.2. Selecting Mode (AM/FM)

- Use the slide switch (SW1) to select between AM and FM modes.

### 5.3. Tuning and Volume

- **Tuning:** Rotate the "TUNING" knob to scan for radio stations. The "TUNE" LED (LED1) will illuminate when a strong signal is received.
- **Volume:** Adjust the "VOL" knob to control the audio output level from the stereo speakers.

- **Antenna Adjustment:** Extend and rotate the FM antenna for optimal FM reception. For AM reception, the internal magnetic rod antenna is used; try rotating the entire radio for best signal.



**Choose your favorite radio station.  
Enjoy it! ;-)**

- **Prominent silver knob cap for more comfortable tuning.**

Image: A hand adjusting the silver tuning knob on the assembled radio, demonstrating the user interaction for station selection.

# Customized Long Antennas



Image: The assembled radio positioned outdoors with its long, retractable FM antenna fully extended, illustrating its design for enhanced reception.

## 6. MAINTENANCE

- Keep the radio clean and free from dust. Use a soft, dry cloth for cleaning.
- Avoid exposing the radio to moisture or extreme temperatures.
- If not in use for an extended period, remove the batteries to prevent leakage.
- Handle the antennas with care to prevent bending or breaking.

## 7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Radio does not power on.	Batteries are dead or incorrectly inserted; power switch is off; faulty solder joint on power circuit.	Check battery polarity and charge/replace batteries. Ensure power switch is ON. Inspect solder joints for the power input and switch.
No sound or very low sound.	Volume too low; speakers incorrectly wired or faulty; audio IC not properly soldered.	Increase volume. Check speaker wiring and solder connections. Verify IC chip soldering and orientation.
Poor reception (static, weak signals).	Antenna not extended/positioned correctly; local interference; faulty antenna connection.	Fully extend and adjust FM antenna. Rotate the radio for AM reception. Move away from electronic devices causing interference. Check antenna solder points.
Tuning LED (LED1) does not light up.	LED is reversed; LED is faulty; tuning circuit issue.	Check LED polarity. Ensure all components in the tuning circuit are correctly soldered.

## 8. SPECIFICATIONS

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- **Model:** VT-16
- **Radio Modes:** AM, FM
- **Speakers:** 2 x 8Ω1W
- **AM Antenna:** 4.7 inches (120mm) magnetic rod
- **FM Antenna:** 13.7 inches (350mm) retractable
- **PCB Dimensions:** 6.3 x 0.78 x 5 inches (16 x 2 x 12.7 cm)
- **Item Weight:** 9.9 ounces (280g)
- **Power Source:** 3 x AA batteries (not included) or DC 5V via plug
- **Manufacturer:** VIGURTIME
- **Country of Origin:** China
- **Recommended Age:** 14 years and up

## 9. WARRANTY AND SUPPORT

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For any questions regarding assembly, troubleshooting, or product support, please refer to the contact information provided with your purchase or visit the official VIGURTIME website. While this is a DIY kit, VIGURTIME aims to provide assistance for a successful building experience.

