

Velleman MK136

Velleman MK136 Super Stereo Ear Project Kit Instruction Manual

Model: MK136

1. INTRODUCTION

This manual provides detailed instructions for the assembly, operation, and maintenance of the Velleman MK136 Super Stereo Ear Project Kit. The MK136 is an electronic kit designed for hobbyists and enthusiasts to build a device capable of amplifying ambient sounds in stereo, providing an immersive audio experience through headphones. This kit requires soldering and basic electronics knowledge for successful assembly.

2. SAFETY INSTRUCTIONS

- Always wear appropriate eye protection when soldering.
- Ensure adequate ventilation in your workspace to avoid inhaling solder fumes.
- Use a grounded soldering iron to prevent electrostatic discharge (ESD) damage to sensitive components.
- Verify component polarity and placement before soldering to prevent damage to the circuit.
- Keep the kit and tools out of reach of children.
- Do not apply power to the circuit until all components are correctly installed and connections are verified.

3. KIT CONTENTS

Before beginning assembly, verify that all components listed below are present in your kit. If any parts are missing or damaged, contact your supplier.

- Printed Circuit Board (PCB)
- Resistors (various values)
- Capacitors (electrolytic and ceramic)
- Integrated Circuits (ICs) and sockets

- Electret Microphones (2)
- Potentiometer (volume control)
- 3.5mm Stereo Headphone Jack
- Battery Clip (for 9V battery)
- LED (Power indicator)
- Miscellaneous hardware (e.g., wires, standoffs)

4. ASSEMBLY INSTRUCTIONS

Follow these steps carefully to assemble your Velleman MK136 Super Stereo Ear kit. Refer to the PCB silkscreen markings for component placement.

1. **Component Identification:** Sort all components by type and value. Use a multimeter to verify resistor values if unsure.
2. **Resistor Installation:** Solder all resistors onto the PCB according to their marked positions. Ensure good solder joints.
3. **Diode/LED Installation:** Solder any diodes and the LED, paying close attention to polarity (the longer lead of an LED is typically positive).
4. **Capacitor Installation:** Install ceramic capacitors (non-polarized) and then electrolytic capacitors. For electrolytic capacitors, observe polarity: the longer lead is positive, and the stripe on the casing indicates the negative lead.
5. **IC Socket Installation:** Solder the IC sockets onto the PCB. Ensure the notch on the socket aligns with the notch on the PCB silkscreen. *Do not insert the ICs yet.*
6. **Potentiometer and Headphone Jack:** Solder the potentiometer and 3.5mm headphone jack into their designated positions.
7. **Microphone Installation:** Solder the two electret microphones. Pay attention to their polarity if indicated on the PCB or component itself.
8. **Battery Clip:** Solder the red wire of the battery clip to the positive (+) terminal and the black wire to the negative (-) terminal on the PCB.
9. **Final Inspection:** Carefully inspect all solder joints for bridges, cold joints, or incorrect component placement.
10. **IC Insertion:** Once satisfied with the inspection, carefully insert the Integrated Circuits into their respective sockets, ensuring the notch on the IC aligns with the notch on the socket and PCB. Bend the pins slightly inward if necessary to ensure proper fit.



Image 1: Fully assembled Velleman MK136 Super Stereo Ear circuit board. This image shows the compact green PCB populated with various electronic components including resistors, capacitors, integrated circuits, two electret microphones (one on each side), a volume potentiometer, and a headphone jack. The board is designed for a 9V battery power source.

5. OPERATING INSTRUCTIONS

1. **Power Connection:** Connect a fresh 9V battery to the battery clip. The power indicator LED should illuminate.
2. **Headphone Connection:** Plug a pair of stereo headphones (3.5mm jack) into the headphone output jack on the circuit board.
3. **Volume Adjustment:** Rotate the potentiometer knob to adjust the volume level. Start with the volume at its lowest setting and gradually increase it to a comfortable listening level.
4. **Microphone Orientation:** Position the two electret microphones to capture sounds from desired directions. The stereo effect will be more pronounced when the microphones are oriented to pick up sounds from different spatial locations.
5. **Power Off:** To turn off the device, disconnect the 9V battery.

6. MAINTENANCE

- **Cleaning:** Keep the circuit board clean and free from dust and debris. Use a soft, dry brush or compressed air for cleaning.
- **Battery Replacement:** Replace the 9V battery when the sound becomes weak or distorted, or if the power LED fails to illuminate brightly.
- **Storage:** When not in use, store the device in a dry, cool place, away from direct sunlight and extreme temperatures. Disconnect the battery during long periods of storage to prevent leakage.
- **Component Inspection:** Periodically inspect solder joints and components for any signs of damage or corrosion. Re-solder any loose connections.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
No sound or very low sound.	Battery is dead or incorrectly connected. Headphones not plugged in or faulty. Volume potentiometer set too low. Incorrectly soldered components (e.g., ICs, capacitors, microphones). Microphones wired in reverse polarity.	Replace 9V battery; check battery clip polarity. Ensure headphones are fully inserted and functional. Increase volume using the potentiometer. Inspect all solder joints and component orientations. Verify microphone polarity and connections.
Distorted or noisy sound.	Weak battery. Poor solder joints. Faulty component. Interference from external sources.	Replace 9V battery. Re-inspect and re-solder any suspicious joints. Carefully check components for damage. Move away from potential sources of electromagnetic interference.
Power LED does not light up.	Dead battery. LED installed with incorrect polarity. Faulty LED or resistor in series with LED. Incorrect battery clip connection.	Replace 9V battery. Check LED polarity and re-solder if necessary. Verify resistor value and connection. Ensure battery clip is correctly soldered to the PCB.

8. SPECIFICATIONS

- **Model:** MK136
- **Power Supply:** 9V DC (e.g., 9V battery)
- **Output:** 3.5mm Stereo Headphone Jack
- **Microphones:** 2x Electret Microphones
- **Controls:** Volume Potentiometer
- **Dimensions (assembled PCB):** Approximately 6 x 4 x 0.5 inches (15.24 x 10.16 x 1.27 cm)

- **Weight (assembled):** Approximately 2.4 ounces (68 grams)
- **RoHS Compliant:** Yes






9. WARRANTY AND SUPPORT

As a project kit, the Velleman MK136 is intended for educational and hobbyist use. Due to the nature of DIY assembly, warranty coverage typically applies to defective components at the time of purchase, not to issues arising from incorrect assembly or soldering. For support regarding missing parts or defective components, please contact your original retailer or Velleman customer service with your proof of purchase.

For additional resources, technical diagrams, or community forums, please visit the official Velleman website or relevant electronics hobbyist communities online.

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Related Documents - MK136

	<p>Velleman K4040 Stereo Valve Power Amplifier - Illustrated Assembly Manual</p> <p>Detailed illustrated assembly manual for the Velleman K4040 stereo valve power amplifier kit. Covers features, specifications, tools, assembly steps, component lists, wiring diagrams, final inspection, setup, testing, usage, and troubleshooting.</p>
	<p>Velleman K2637 Super Mini 2.5W Audio Power Amplifier Kit Assembly Manual</p> <p>Assembly manual for the Velleman K2637 Super Mini 2.5W Audio Power Amplifier kit, detailing specifications, components, assembly steps, and connection examples.</p>
	<p>Velleman K5201 Light Computer - Illustrated Assembly Manual</p> <p>Detailed illustrated assembly manual for the Velleman K5201 Light Computer kit. Learn how to build and use this electronic project featuring 16 patterns and 7 outputs for creating unique light shows.</p>
	<p>Velleman K4700 Speaker Protection Kit: Features, Assembly, and Testing Guide</p> <p>A comprehensive guide to the Velleman K4700 Speaker Protection Kit, covering its features, technical specifications, detailed assembly instructions, component lists, testing procedures, and connection diagrams for amplifier protection.</p>
	<p>Velleman MK151 Electronic Kit Assembly Instructions</p> <p>Comprehensive assembly guide for the Velleman MK151 electronic kit, detailing component identification, step-by-step construction, and important environmental disposal information.</p>



[Velleman K5201 Light Computer Illustrated Assembly Manual](#)

Detailed illustrated assembly manual for the Velleman K5201 Light Computer kit, including features, specifications, component lists, assembly instructions, hook-up diagrams, and safety information.