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› ASHATA CW QRP Ham Amateur Shortwave Radio Transceiver Kit (Model EBC5bmtu36ogkzvr553) - Instruction Manual

ASHATA EBC5bmtu36ogkzvr553

ASHATA CW QRP Ham Amateur Shortwave Radio Transceiver Kit

Model: EBC5bmtu36ogkzvr553

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1. INTRODUCTION

This manual provides detailed instructions for the assembly and operation of your ASHATA CW QRP Ham Amateur Shortwave Radio Transceiver Kit. This kit is designed for enthusiasts who enjoy building their own electronic devices, offering a compact and functional shortwave radio transmitter and receiver accessory for the Forty 9er 3W. Please read this manual thoroughly before beginning assembly or operation to ensure proper functionality and safety.

2. SAFETY INFORMATION

Working with electronic components requires careful attention to safety. Please observe the following precautions:

- Always disconnect power before making any connections or adjustments to the circuit.
- Use appropriate soldering equipment and ensure proper ventilation to avoid inhaling fumes.
- Wear safety glasses to protect your eyes from solder splashes or flying component leads.
- Be aware of static electricity, which can damage sensitive electronic components. Use anti-static precautions if possible.
- Double-check all component orientations (e.g., diodes, electrolytic capacitors, integrated circuits) before soldering. Incorrect orientation can damage components.
- Keep the kit and tools out of reach of children.

3. PACKAGE CONTENTS

Your ASHATA CW QRP Ham Amateur Shortwave Radio Transceiver Kit includes the following items:

- Unsoldered Circuit Board (PCB)
- Scattered Electronic Components Kit (resistors, capacitors, diodes, transistors, ICs, connectors, etc.)
- Circuit Diagram

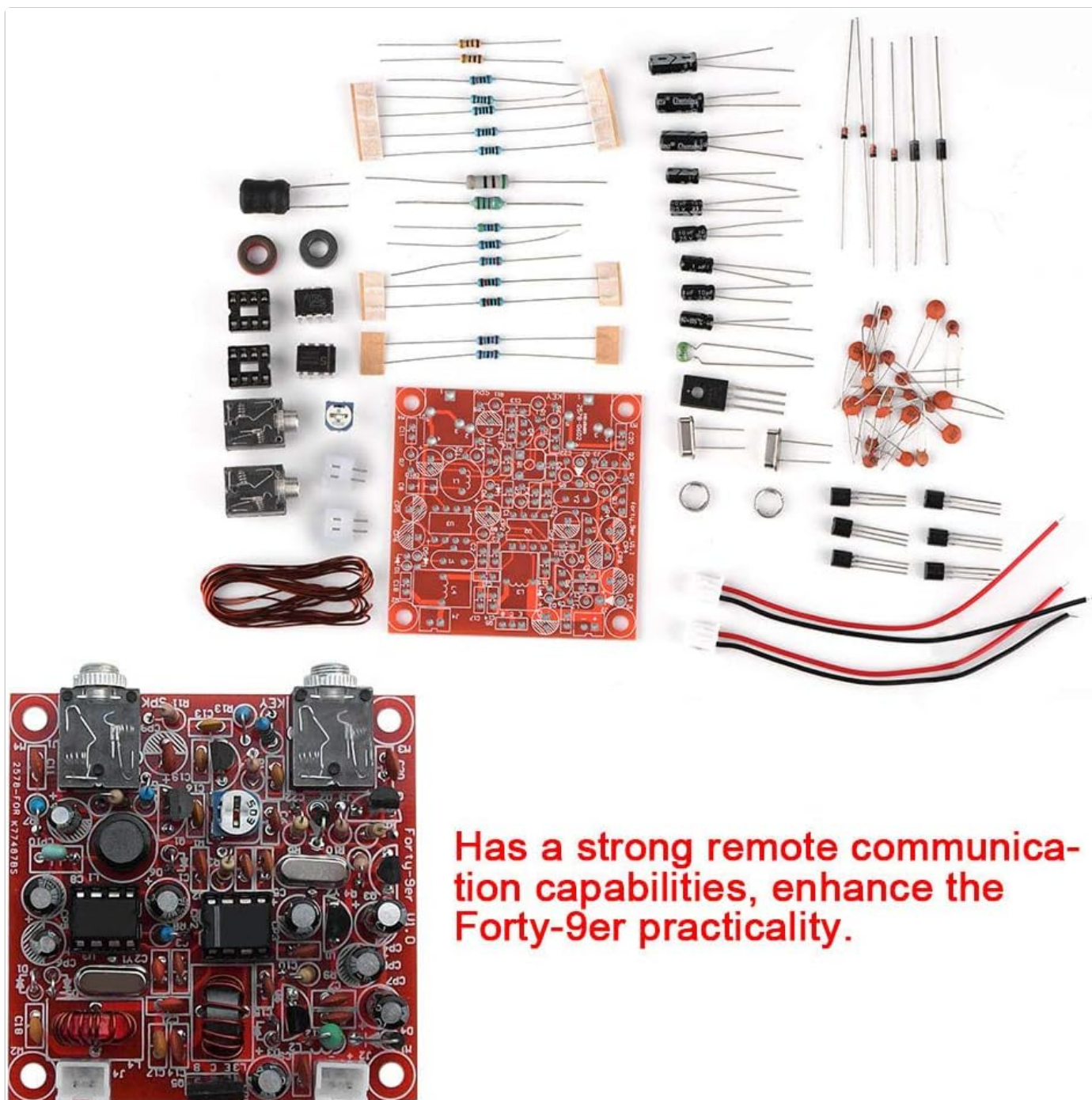


Figure 3.1: All components included in the kit, laid out for identification.

4. ASSEMBLY INSTRUCTIONS

This kit requires soldering and basic electronics assembly skills. Refer to the included circuit diagram for detailed component placement and values. It is recommended to assemble components in order of height, starting with the lowest profile components first.

4.1 Component Identification

Before starting, identify all components using the provided circuit diagram and the component list. Organize them to streamline the assembly process.

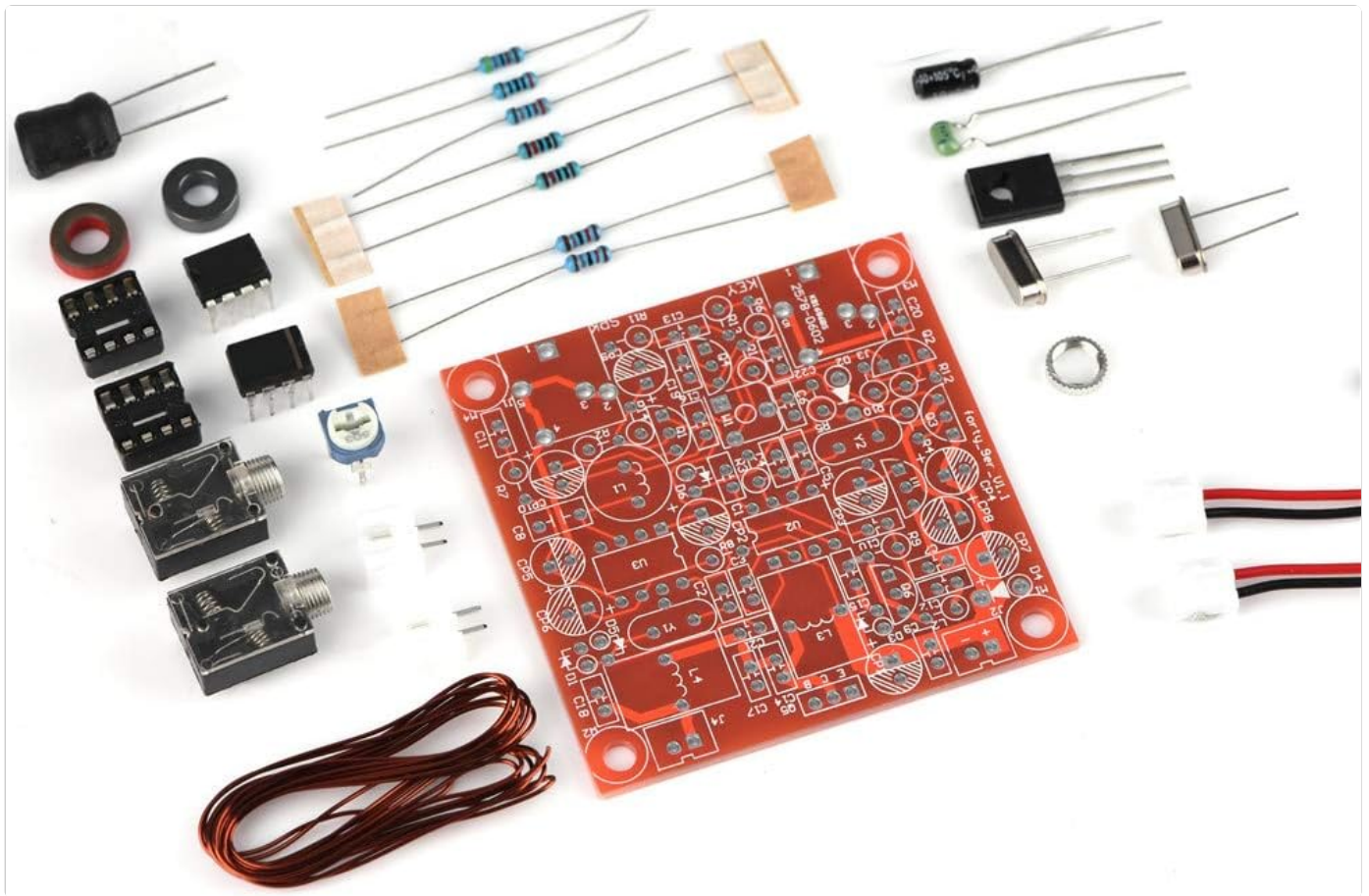


Figure 4.1: Circuit board and a selection of components.

4.2 Soldering Process

1. **Resistors:** Solder all resistors onto the PCB. Pay attention to their values as indicated on the circuit diagram and PCB silkscreen.
2. **Diodes:** Solder diodes, ensuring correct polarity (band on diode matches silkscreen).
3. **Capacitors:** Solder ceramic capacitors. For electrolytic capacitors, ensure correct polarity (longer lead is positive, stripe on body indicates negative).
4. **Transistors and IC Sockets:** Solder transistors and IC sockets. If using IC sockets, insert the ICs only after all soldering is complete and the board has cooled. Ensure correct orientation of ICs (notch or dot on IC matches socket/silkscreen).
5. **Inductors and Coils:** Solder inductors and coils.
6. **Connectors and Jacks:** Solder all input/output jacks and power connectors.
7. **Potentiometers:** Solder any potentiometers or variable resistors.



Figure 4.2: Detailed view of connectors and ICs for assembly.

4.3 Final Checks

After soldering all components, carefully inspect the board for any solder bridges, cold solder joints, or incorrectly placed components. Trim any excessively long component leads.

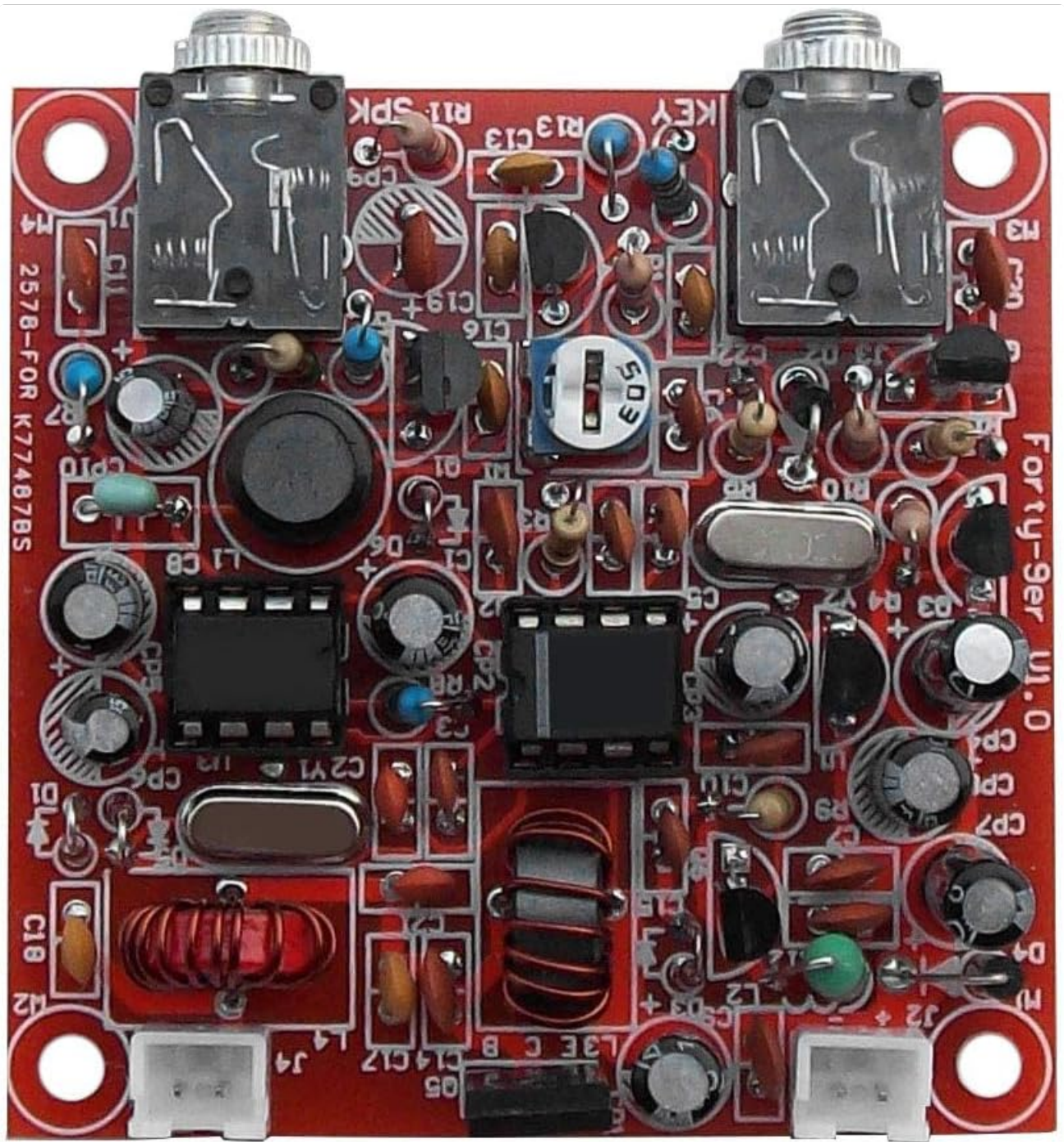


Figure 4.3: Example of a fully assembled circuit board.

4.4 Assembly Video Guide

For a visual guide on the assembly process, please refer to the video below. This short video demonstrates the components and a quick overview of the assembly steps.

Video 4.1: A brief overview of the HAM Radio QRP CW Shortwave Transmitter Receiver kit components and assembly process.

5. OPERATING INSTRUCTIONS

Once your ASHATA CW QRP Ham Amateur Shortwave Radio Transceiver Kit is fully assembled and inspected, you can proceed with operation.

5.1 Connecting Peripherals

1. **Power Supply:** Connect a suitable 5V DC power supply to the designated power input.
2. **Antenna:** Connect a properly tuned shortwave antenna to the antenna connector.

3. **Headset:** Plug your headset into the audio output jack. The kit includes a side circuit that allows you to monitor your keying when transmitting.
4. **CW Key:** Connect your CW key to the key input.

5.2 Basic Operation

The kit functions as a shortwave radio transmitter and receiver. Use the controls (if any, such as potentiometers for volume or tuning) to adjust settings. The 3W output power provides strong remote communication capabilities.

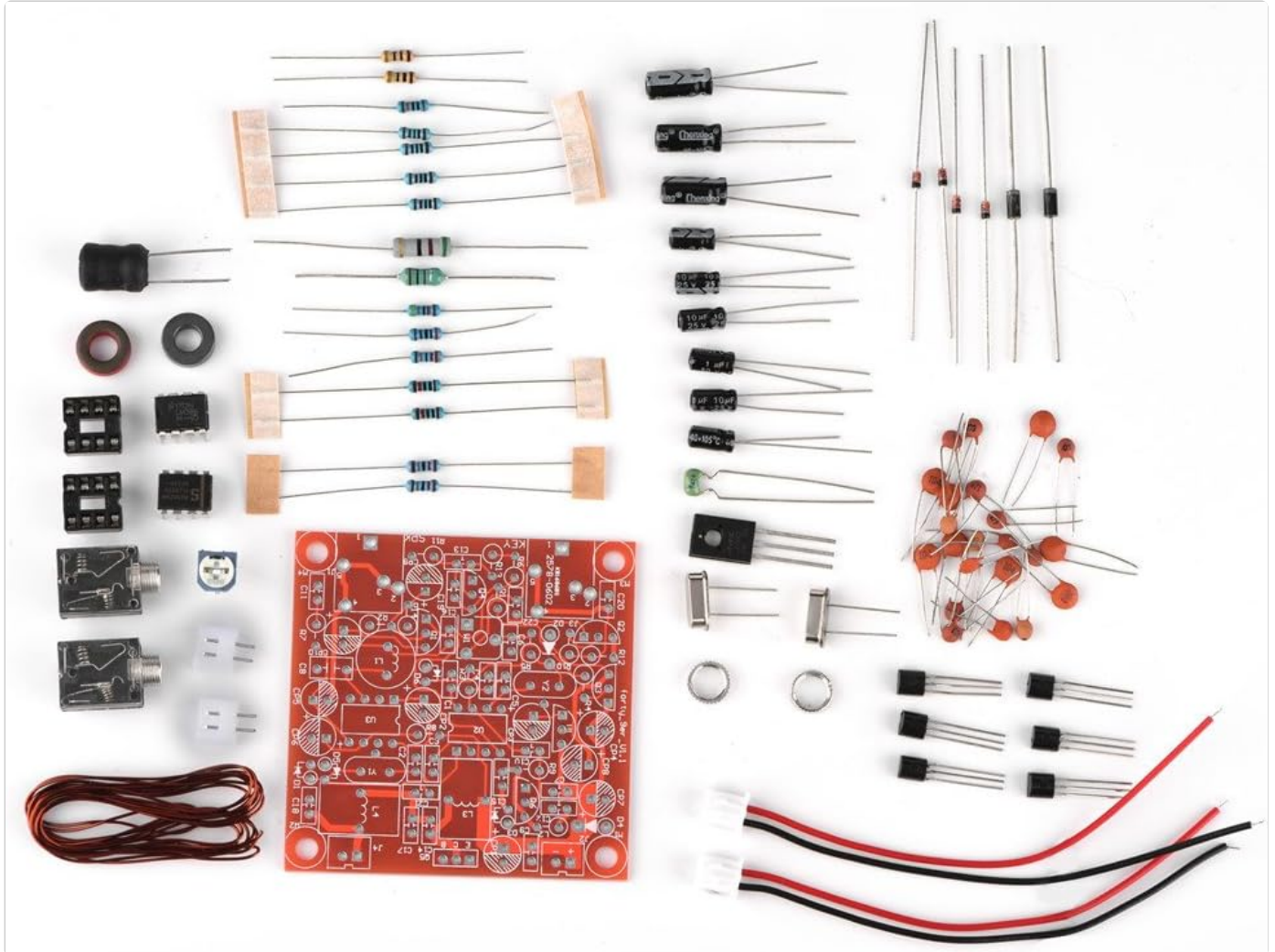


Figure 5.1: The assembled transceiver kit, ready for connection and operation.

6. MAINTENANCE

To ensure the longevity and optimal performance of your transceiver kit, follow these maintenance guidelines:

- Keep the circuit board clean and free from dust and debris. Use a soft brush or compressed air for cleaning.
- Store the kit in a dry environment, away from extreme temperatures and humidity.
- Periodically inspect solder joints for any signs of cracking or corrosion. Re-solder if necessary.
- Ensure all connections (power, antenna, headset, key) are secure before operation.

7. TROUBLESHOOTING

If you encounter issues with your assembled kit, consider the following troubleshooting steps:

- **No Power:** Check your power supply connection and ensure it provides the correct voltage (5V DC). Verify the power switch

(if any) is in the ON position.

- **No Reception/Transmission:** Verify your antenna connection. Ensure the antenna is properly tuned for the operating frequency. Check all soldered connections on the board, especially those related to the RF path.
- **Distorted Audio:** Check your headset connection. Inspect the audio amplifier section of the circuit for any faulty components or solder joints.
- **Incorrect Component Function:** Double-check the placement and orientation of all components against the circuit diagram. Incorrectly oriented diodes or ICs are common issues.
- **Intermittent Operation:** Look for cold solder joints or loose connections that might be causing intermittent contact.

8. SPECIFICATIONS

Feature	Detail
Product Type	CW QRP Ham Amateur Shortwave Radio Transceiver Kit
Model Number	EBC5bmtu36ogkzvr553
Brand	ASHATA
Output Power	3W
Board Size	6 x 6 cm (2.36 x 2.36 inches)
Item Weight	56g (1.94 ounces)
Package Dimensions	9.84 x 4.33 x 0.39 inches
Date First Available	March 24, 2022

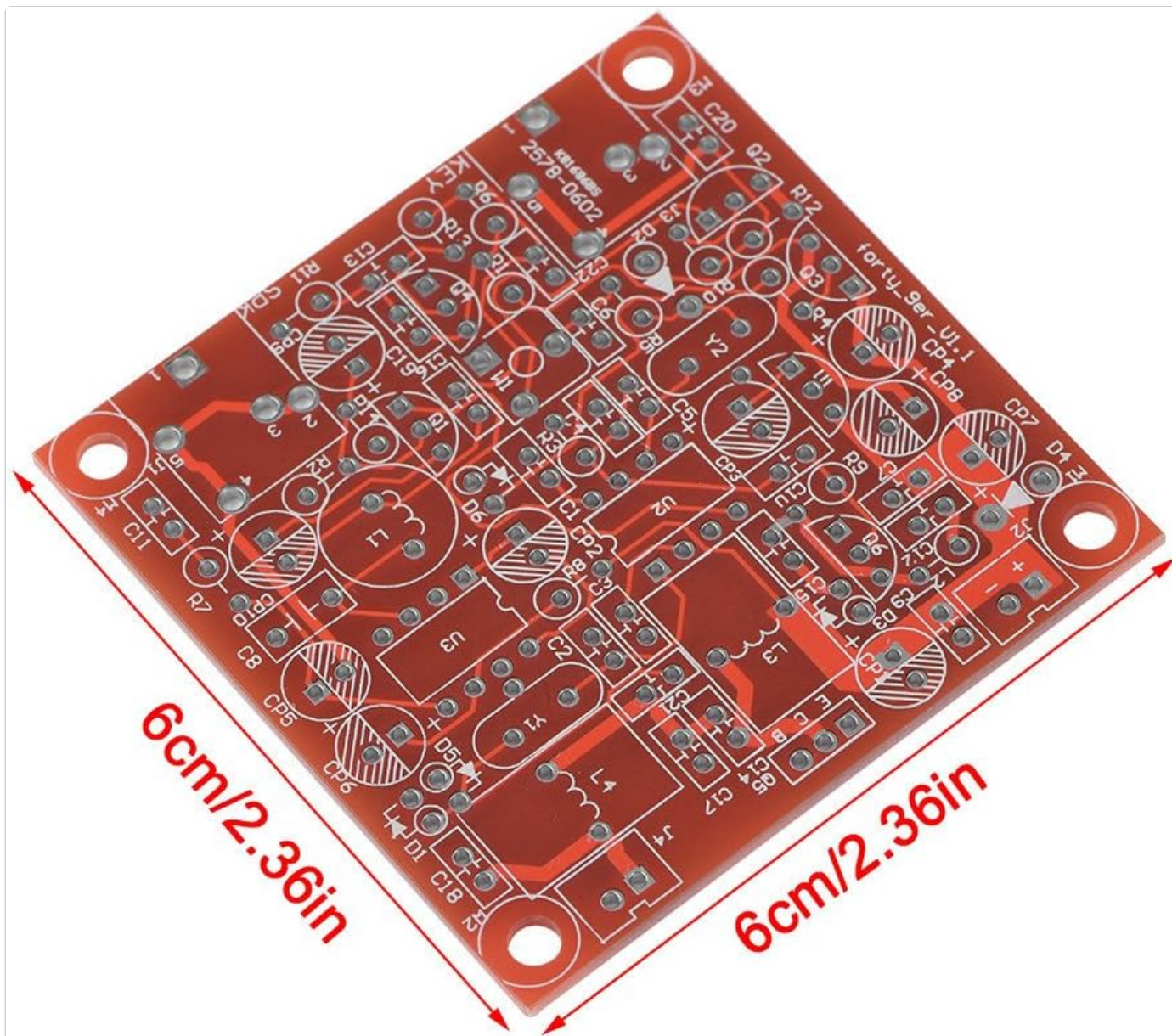


Figure 8.1: Circuit board dimensions.

9. WARRANTY AND SUPPORT

For warranty information or technical support regarding your ASHATA CW QRP Ham Amateur Shortwave Radio Transceiver Kit, please refer to the seller's policies or contact ASHATA customer service through the platform where the product was purchased. As this is a DIY kit, successful assembly and operation depend on the user's skill and adherence to instructions. Please retain your proof of purchase for any warranty claims.

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