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Phoncoo C51 AVR MCU Development Board Kit

Phoncoo C51 AVR MCU Development Board Kit User Manual

Model: C51 AVR MCU Development Board Kit

1. INTRODUCTION

This manual provides essential instructions for the setup, operation, and maintenance of your Phoncoo C51 AVR MCU Development Board Kit. Designed for DIY enthusiasts and learning purposes, this board supports various 51 series microcontrollers and the ATmega16, facilitating microcontroller programming and development projects.

2. SAFETY INFORMATION

- **Self-Recovery Fuse:** The development board is equipped with a self-recovery fuse for short circuit and over-current protection. In case of misuse leading to a short circuit, the fuse will automatically cut off power, preventing harm to your computer. Power will be restored automatically after the short circuit is resolved.
- **Welding Precautions:** When welding components, pay close attention to temperature-sensitive parts like Light Emitting Diodes (LEDs). Avoid overheating to prevent damage. Faster welding is recommended for such components.

3. PACKAGE CONTENTS

Verify that all components listed below are present in your package:

- PCB board
- Jumper cap
- 11.0592M crystal chip
- MAX232 chip

Note: A microcontroller chip, power line, and download line are not included and must be acquired separately.

4. SETUP INSTRUCTIONS

4.1 Component Overview

Familiarize yourself with the layout of the development board:



Figure 1: Phoncoo C51 AVR MCU Development Board Kit. This image displays the green PCB board populated with various electronic components including a USB port, a DB9 serial port, several integrated circuits (ICs), push buttons, LEDs, and a large blue ZIF socket for microcontrollers.

4.2 Initial Assembly and Connection

1. **Inspect the PCB:** Before assembly, ensure the PCB board is free from any physical damage. All pads are oversized for easier DIY welding.
2. **Install Components:** Carefully solder the provided components (Jumper cap, 11.0592M crystal chip, MAX232) onto the PCB. Refer to the board's silk screen for correct placement.
3. **Insert Microcontroller:** Once the board is assembled, insert your chosen 51 series or ATmega16 microcontroller into the appropriate socket. Ensure correct orientation.
4. **Connect Power:** Connect a suitable 5V power supply to the board. The board features a USB port for power and communication.
5. **Connect to Computer:** Use a USB cable to connect the development board to your computer.

5. OPERATING INSTRUCTIONS

5.1 Supported Microcontrollers

The development board supports a wide range of microcontrollers:

- **51 Series:** STC89C52, STC12C5A60S2, AT89C51, AT89C52, AT89S51, AT89S52, and other 40-pin 51 series microcontrollers.
- **AVR Series:** ATmega16 (requires an adapter plate).

5.2 Programming Microcontrollers

Different microcontrollers require specific programming methods:

- **STC89C52, STC12C5A60S2:** These can be programmed directly via serial download.
- **AT89S Series (AT89S51, AT89S52):** Requires a specialized programming download program and a USBISP

programmer.

- **AT89C Series (AT89C51, AT89C52):** Requires a specialized programming download program and a USBISP programmer.
- **ATmega16:** Requires an adapter plate and a USBISP Downloader for programming.

6. MAINTENANCE

To ensure the longevity and proper functioning of your development board:

- **Cleanliness:** Keep the board clean and free from dust and debris. Use a soft, dry brush or compressed air for cleaning.
- **Storage:** Store the board in a dry, anti-static environment when not in use.
- **Welding Quality:** Ensure all solder joints are clean and strong. Poor soldering can lead to intermittent issues.

7. TROUBLESHOOTING

- **Board Not Powering On:**

- Check power connections and ensure the power supply is providing the correct voltage (5V).
- If a short circuit occurred, the self-recovery fuse might have activated. Disconnect power, resolve the short, and reconnect.

- **Programming Errors:**

- Verify that the correct programming method and hardware (e.g., USBISP) are being used for your specific microcontroller.
- Ensure the microcontroller is correctly seated in its socket and that all connections are secure.
- Check for proper driver installation for your USBISP programmer or serial interface.

- **Component Malfunction After Welding:**

- Review your welding technique, especially for temperature-sensitive components. Overheating can damage parts.
- Ensure correct component orientation (e.g., polarized capacitors, ICs).

8. SPECIFICATIONS

Brand	Phoncoo
Model	C51 AVR MCU Development Board Kit
ASIN	B07KDR54QM
Connectivity Technology	USB
CPU Manufacturer Support	Atmel/Microchip Technology (for supported MCUs)
Included Components	PCB board, Jumper cap, 11.0592M crystal chip, MAX232

Wireless Communication Standard	802.11b <i>(Note: This specification might refer to a general capability of supported MCUs or a specific component, not necessarily built-in Wi-Fi on the board itself.)</i>
Weight	0.081kg (0.18lb)

9. WARRANTY AND SUPPORT

All PCB boards undergo factory testing to ensure normal physical connection. While components are guaranteed, issues arising from unsuccessful welding or debugging are not covered for replacement due to the variable nature of welding technology. However, buyers may arrange for warranty service by covering shipping costs. For further assistance, please refer to the product listing or contact the seller directly.