

ZEKOLO MKS DLC32 V2.1

ZEKOLO Makerbase MKS DLC32 V2.1 32Bit Control Board User Manual

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the ZEKOLO Makerbase MKS DLC32 V2.1 32Bit Control Board. This control board is designed for laser engraving machines, offering advanced control capabilities and connectivity. Please read this manual thoroughly before using the product to ensure proper function and safety.

2. PRODUCT OVERVIEW

The Makerbase MKS DLC32 V2.1 is a 32-bit control board featuring integrated WiFi, designed to support laser modules up to 80W. It offers enhanced processing power for precise control of laser engraving operations. This package includes the MKS DLC32 V2.1 board, a USB cable, the MKS TS35-R display, two 10PIN 40CM flat cables, three A4988 motor drivers, and three heat sinks.

Key Features:

- 32-bit microcontroller for high-performance processing.
- Integrated WiFi for wireless connectivity and control.
- Support for various motor drivers (A4988, TMC2209, etc.).
- Compatibility with TS24-R and TS35-R displays for intuitive user interface.
- Easy installation and disassembly.

Included Components (Package 10):

- 1x MKS DLC32 V2.1 Control Board
- 1x USB Cable
- 1x MKS TS35-R Display
- 2x 10PIN 40CM Flat Cables
- 3x A4988 Motor Drivers

- 3x Heat Sinks

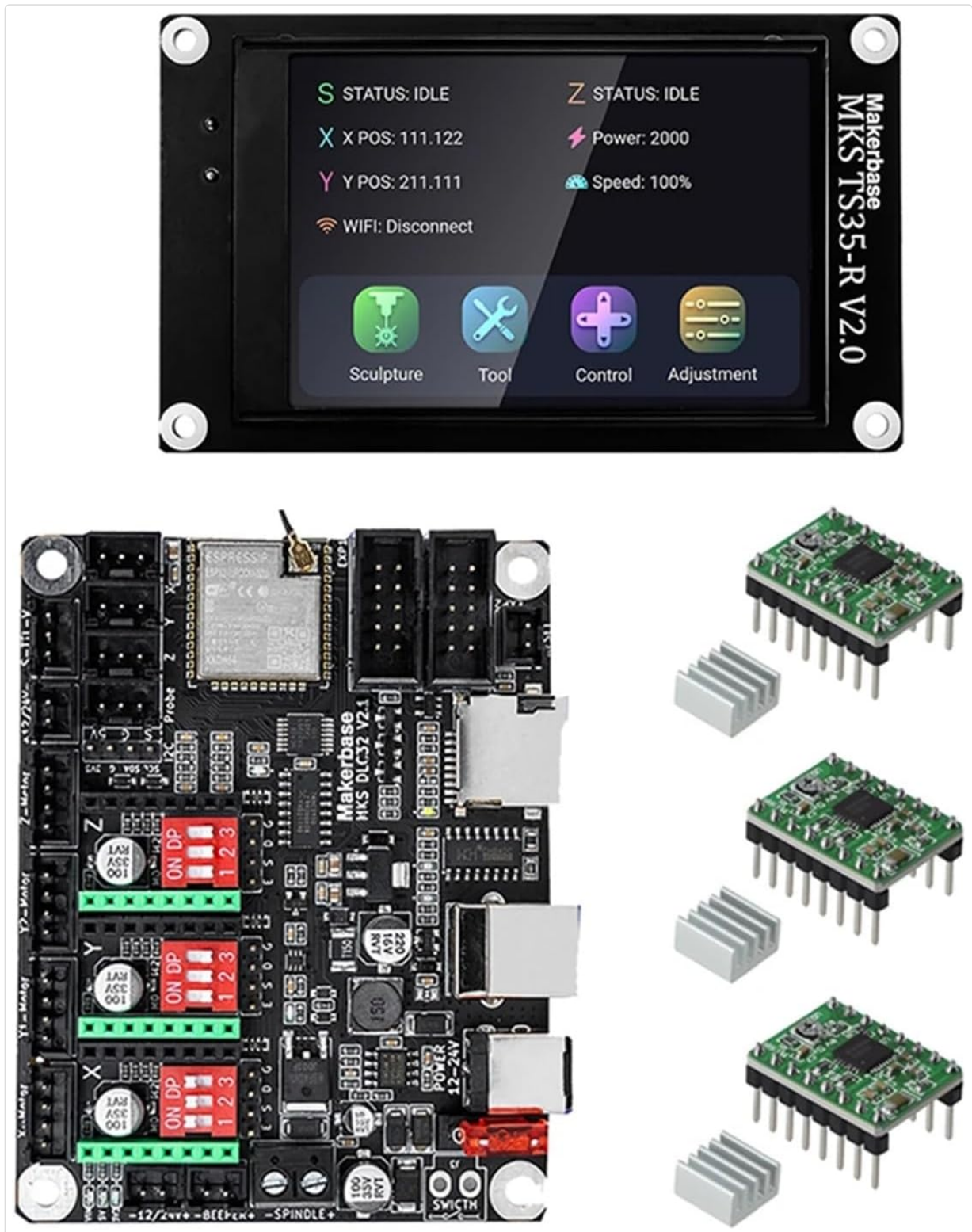
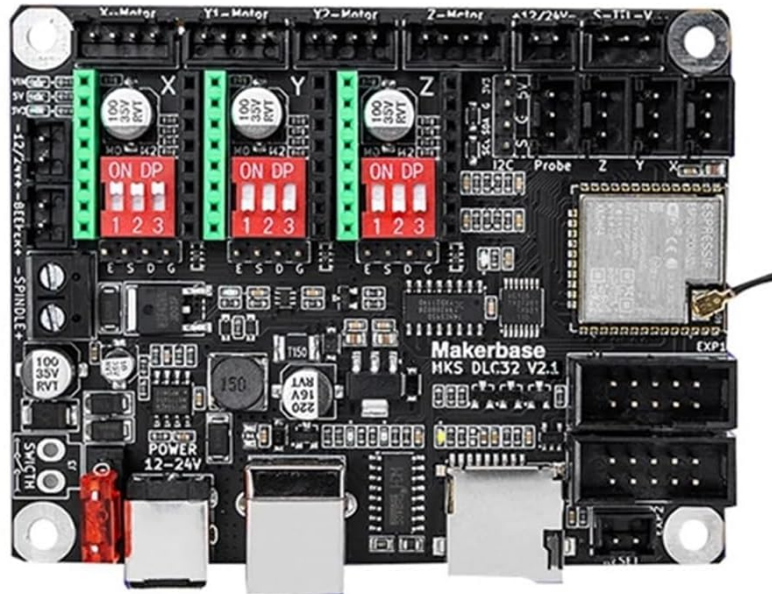


Image 2.1: Overview of the MKS DLC32 V2.1 control board, TS35-R display, and A4988 motor drivers included in Package 10.

MKS DLC32 V2.1



TS24-R



TS35-R

Image 2.2: The MKS DLC32 V2.1 control board shown alongside the TS24-R and TS35-R display options.

TS35/TS24 Display for MKS DLC32



Image 2.3: Close-up view of the MKS TS35-R and TS24-R displays, highlighting their user interfaces.

3. SETUP

Follow these general steps to set up your ZEKOLO Makerbase MKS DLC32 V2.1 control board. For detailed wiring diagrams and specific configurations, refer to the official GitHub repository.

3.1 Component Installation:

1. **Install Motor Drivers:** Carefully insert the A4988 motor drivers into their designated slots on the MKS DLC32 V2.1 board. Ensure correct orientation to prevent damage. Attach the provided heat sinks to the motor drivers for optimal thermal management.
2. **Connect Display:** Use one of the 10PIN flat cables to connect the MKS TS35-R display to the

appropriate port on the control board.

3. **Power Connection:** Connect a compatible 12-24V DC power supply to the power input terminal of the MKS DLC32 V2.1 board. Ensure the power supply matches the board's voltage requirements.
4. **Laser Module Connection:** Connect your laser module to the designated laser output port. Pay close attention to polarity and voltage requirements of your specific laser module.
5. **USB Connection:** For initial setup or firmware updates, connect the control board to your computer using the provided USB cable.



Image 3.1: Visual representation of the MKS DLC32 V2.1 board and its connection points, including the TS35-R display.

3.2 Firmware and Software:

The MKS DLC32 V2.1 board typically comes pre-loaded with firmware. However, for updates or custom configurations, refer to the official Makerbase GitHub repository for the latest firmware and flashing instructions. Software such as LightBurn or LaserGRBL can be used for sending G-code commands to the board.

4. OPERATING INSTRUCTIONS

Once the control board is properly set up and connected to your laser engraving machine, you can begin operation. The MKS TS35-R display provides a user-friendly interface for controlling the engraving process.

4.1 Basic Operation via Display:

1. **Power On:** Ensure all connections are secure, then apply power to the control board. The display should illuminate.
2. **Navigation:** Use the touch screen on the TS35-R display to navigate through menus such as 'Sculpture', 'Tool', 'Control', and 'Adjustment'.
3. **File Loading:** Load your engraving files (G-code) via the TF card slot on the control board or wirelessly if configured.
4. **Start Engraving:** Select your desired file and initiate the engraving process from the display's interface. Monitor the status and progress shown on the screen.

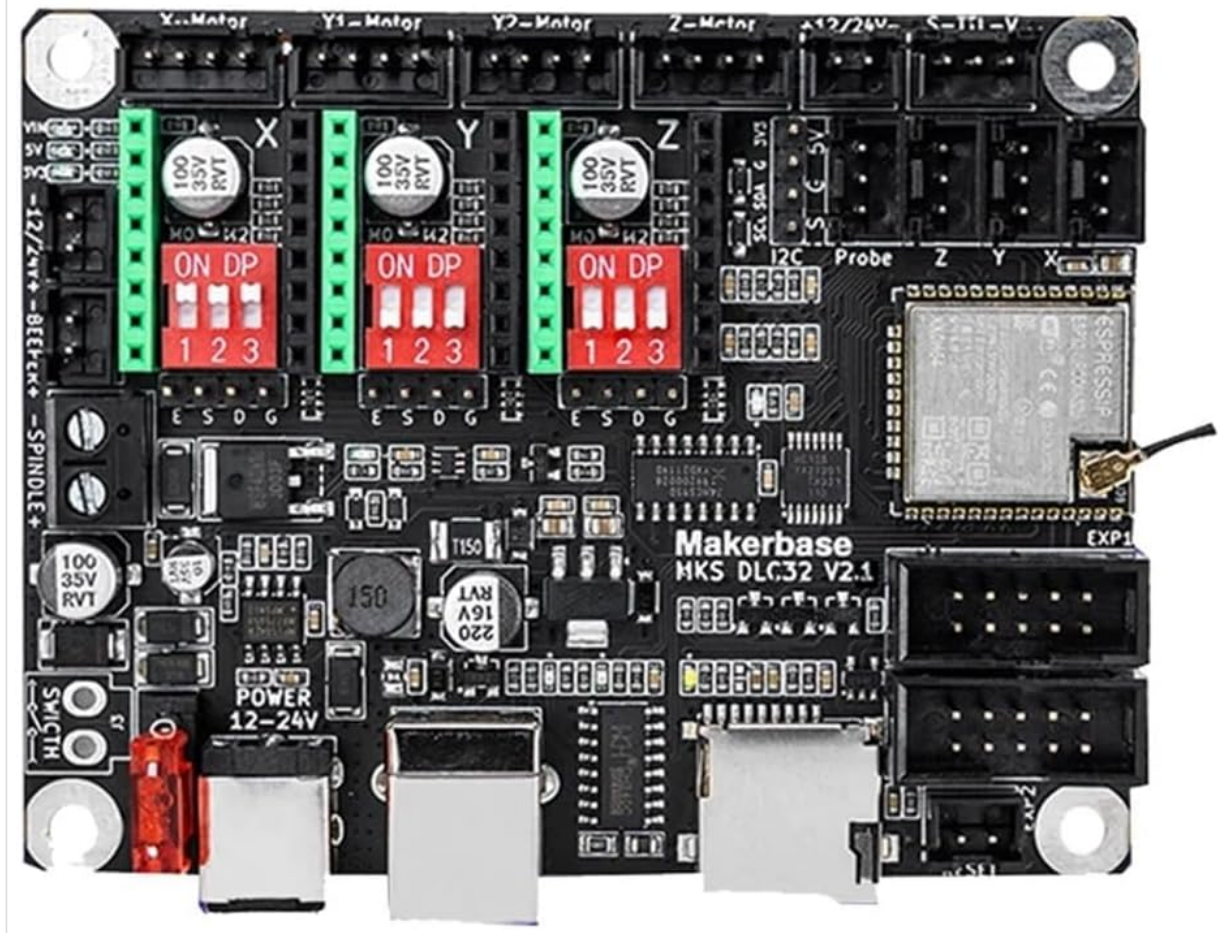


Image 4.1: The MKS DLC32 V2.1 board shown with the TS24-R display, illustrating a different interface option.

4.2 PC Software Control:

Alternatively, you can control the laser engraving machine directly from a computer using compatible software. Connect the control board via USB or WiFi, and use the software's interface to send commands, preview designs, and monitor the engraving process.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your MKS DLC32 V2.1 control board.

- **Cleaning:** Keep the board free from dust and debris. Use a soft brush or compressed air to gently clean the components. Ensure power is disconnected before cleaning.
- **Connections:** Periodically check all cable connections to ensure they are secure and free from corrosion or damage.
- **Heat Sinks:** Ensure heat sinks on motor drivers are clean and properly seated to prevent overheating.
- **Firmware Updates:** Check the official GitHub repository for firmware updates that may improve performance or add new features. Follow update instructions carefully.



Image 5.1: The MKS DLC32 V2.1 board housed within a protective casing, demonstrating an option for enhanced durability.

6. TROUBLESHOOTING

This section addresses common issues you might encounter with your MKS DLC32 V2.1 control board.

6.1 Common Issues and Solutions:

- **Board Not Powering On:**
 - Check power supply connection and ensure it provides the correct voltage (12-24V DC).

- Verify the power switch on the board is in the 'ON' position.
- **Display Not Working:**
 - Ensure the flat cable connecting the display to the board is securely attached at both ends.
 - Confirm the board is powered on.
- **Motors Not Moving:**
 - Check motor driver installation and orientation.
 - Verify motor wiring connections.
 - Ensure motor drivers have heat sinks installed and are not overheating.
 - Confirm G-code commands are being sent correctly.
- **WiFi Connectivity Issues:**
 - Ensure the WiFi antenna is properly connected.
 - Check WiFi settings on the board and your network.
 - Verify the board is within range of your WiFi router.
- **Laser Not Firing/Weak Output:**
 - Check laser module connections and power supply.
 - Verify laser power settings in your engraving software or on the display.
 - Ensure the laser module is compatible with the board's output.

For more advanced troubleshooting or specific error codes, consult the official Makerbase MKS DLC32 GitHub repository or community forums.

7. SPECIFICATIONS

Feature	Detail
Model Number	MKS DLC32 V2.1 (Item model number: 9875)
Brand	ZEKOLO
Manufacturer	NBLINGKAI
Connectivity	WiFi, USB
Supported Displays	MKS TS24-R, MKS TS35-R
Power Input	12-24V DC
Item Weight	50 Grams (1.76 ounces)
Package Dimensions	1.18 x 0.79 x 0.39 inches

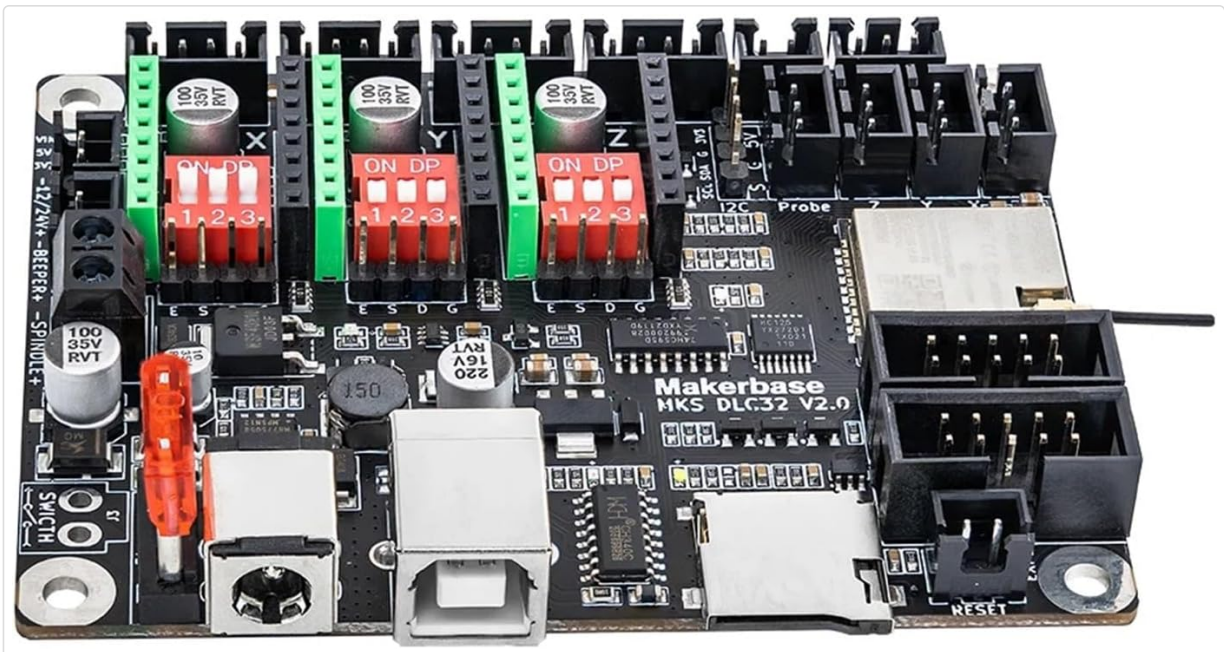


Image 7.1: A view of the MKS DLC32 V2.0 control board, a similar model to the V2.1, showing its various ports and components.

8. WARRANTY AND SUPPORT

The ZEKOLO Makerbase MKS DLC32 V2.1 control board does not come with an explicit warranty description from the manufacturer, NBLINGKAI. For technical support, firmware, and detailed documentation, please refer to the official Makerbase GitHub repository:

<https://github.com/makerbase-mks/MKS-DLC32>

This resource provides valuable information, community support, and the latest updates for your control board.