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› Serounder USB to CAN Module Converter Adapter User Manual

Serounder Serounderey8ik2zmgo

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Comprehensive guide for installation, operation, and maintenance.

1. INTRODUCTION

The Serounder USB to CAN Module Converter Adapter is a compact, open-source device designed to facilitate communication between a computer and a CAN bus network. It enumerates as a virtual serial port, acting as a serial line interface for CAN bus. This module supports standard CAN 2.0A, CAN 2.0B, and CAN FD protocols, making it versatile for various industrial and embedded applications.

Equipped with an ARM Cortex M4 STM32G431C8T6 processor, it offers high performance with operating frequencies up to 170MHz. It features a Type-C USB port for connectivity and supports online and DFU mode firmware upgrades. The module is compatible with ARM-based embedded platforms like Raspberry Pi, Raspberry Pi Zero, and ODROID, and is engineered for enhanced anti-interference capabilities, making it suitable for demanding industrial and motor control environments.

2. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1 x CAN Analyzer Module
- 1 x USB Cable (Type-C to Type-A)
- 1 x Connection Cable (Jumper Wires)

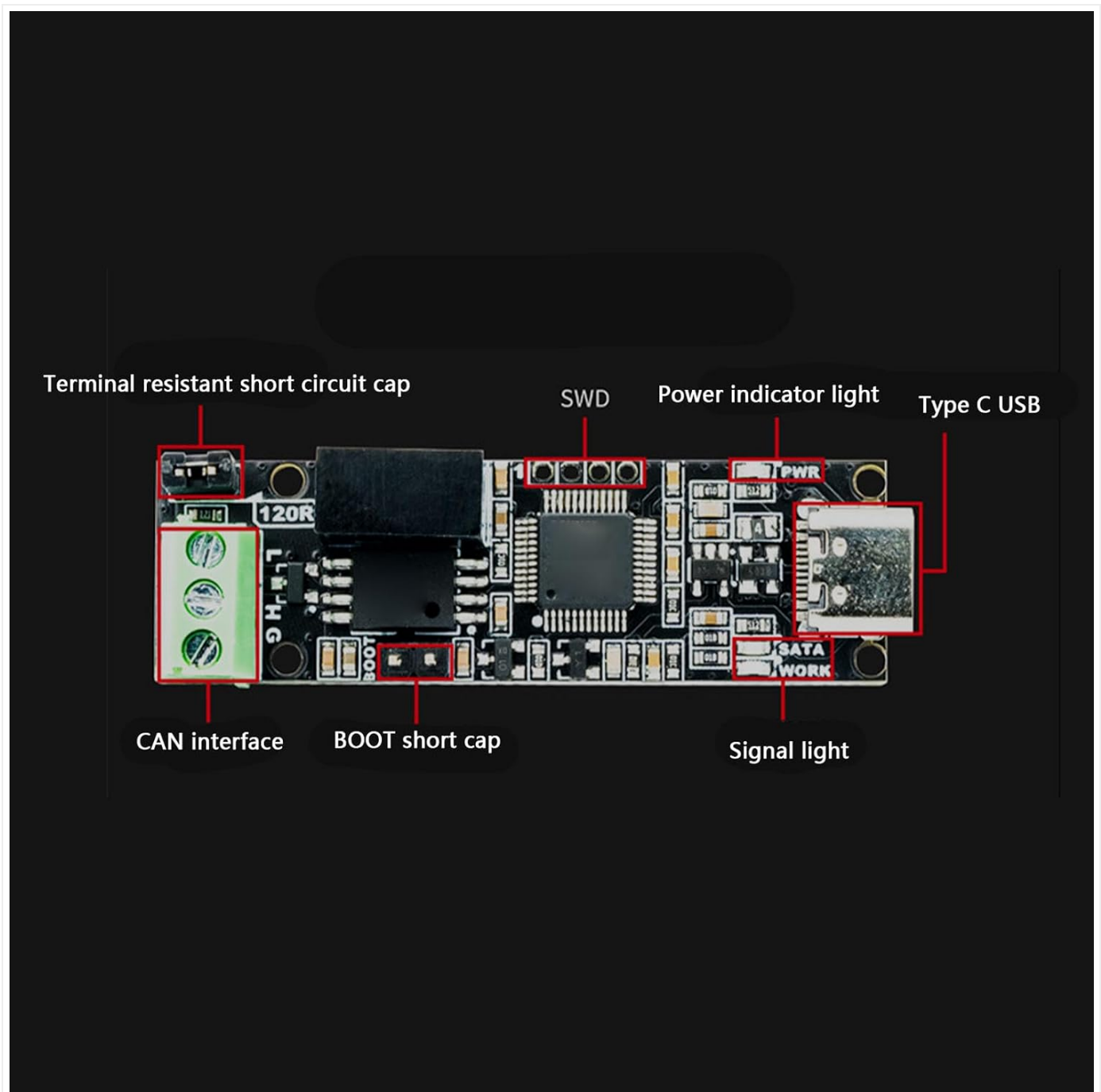


Image: The package contents, showing the Serounder USB to CAN module, a USB Type-C cable, and a set of jumper wires for connection.

3. KEY FEATURES

- **Microprocessor:** ARM Cortex M4 STM32G431C8T6 (up to 170MHz)
- **CAN Standards Supported:** CAN 2.0A, CAN 2.0B, CAN FD
- **USB Interface:** Type-C
- **Firmware:** Compatible with candleLight, slcan
- **Transfer Rate:** 1M, 2M, 5M
- **ESD Guard:** 30kV
- **Signal Isolation:** 5.7kV rms
- **Compatibility:** Raspberry Pi, Raspberry Pi Zero, ODROID, and other ARM-based embedded platforms.
- **Firmware Upgrade:** Online and DFU mode support.

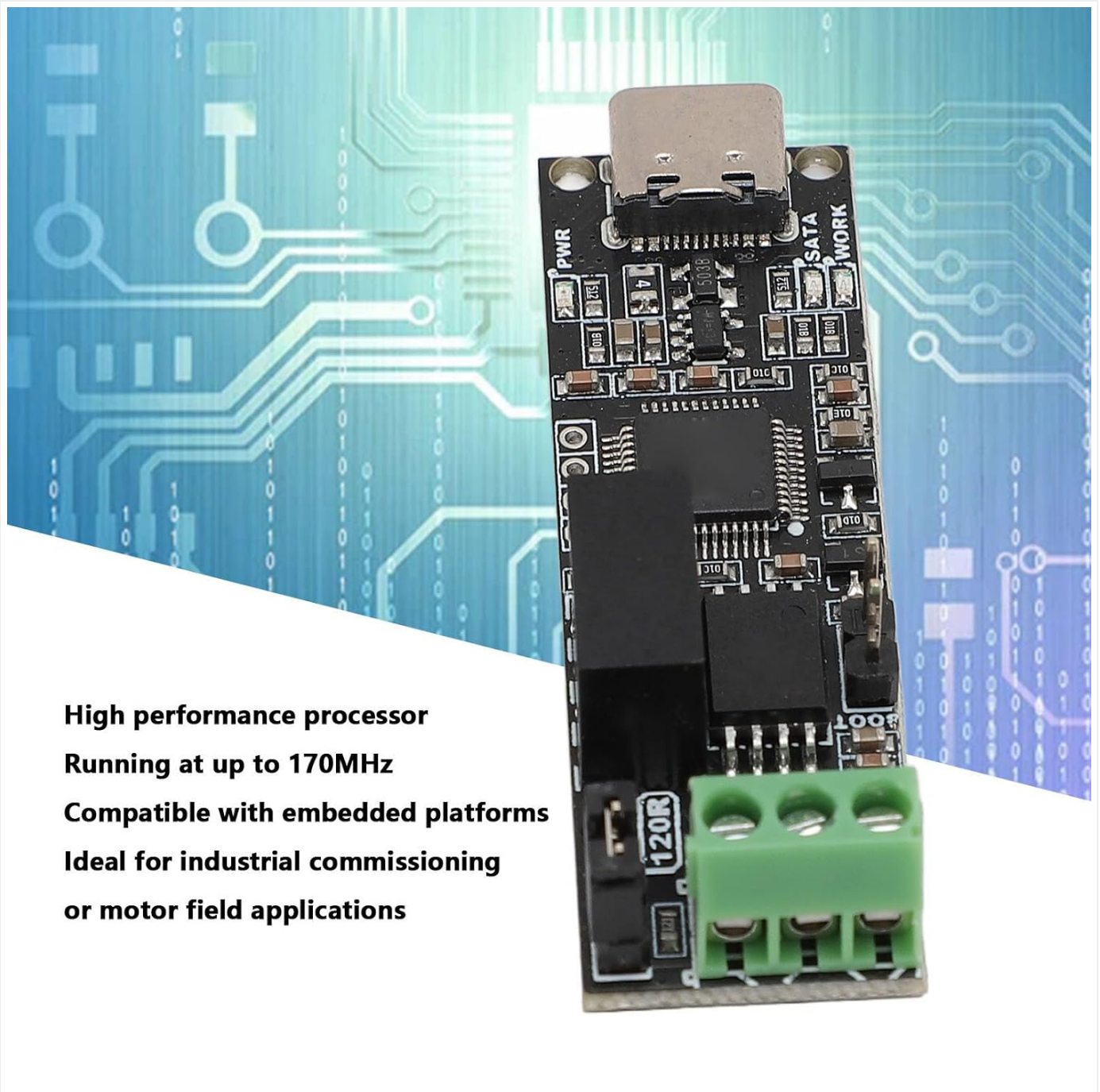
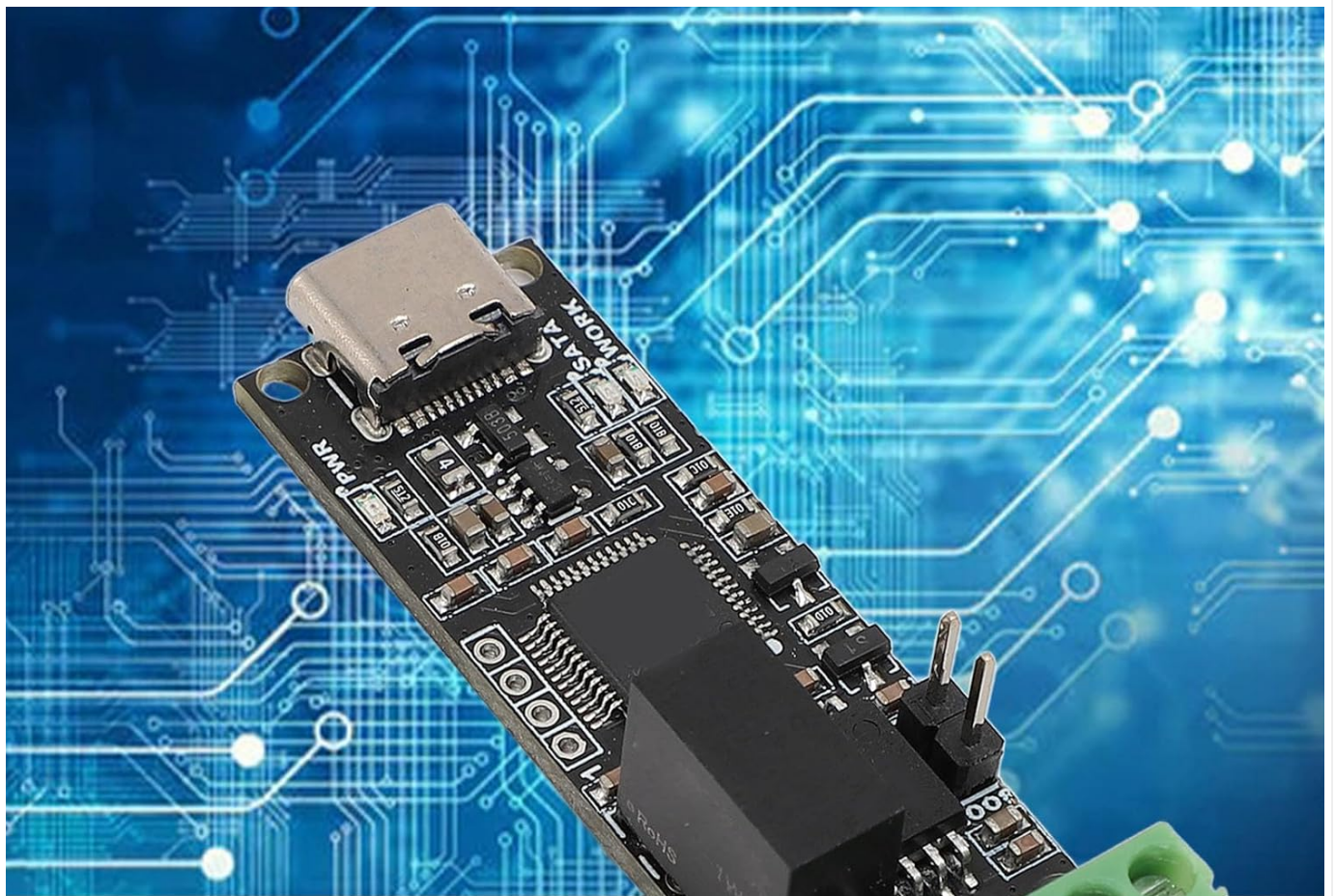


Image: The Serounder USB to CAN module, emphasizing its high-performance processor and suitability for industrial applications.



Open source USB to CAN analyzer
Virtual serial ports on your computer
Act as a serial line for CAN bus interface
Standards CAN2.0A, CAN2.0B and CAN FD

Image: The Serounder USB to CAN module, illustrating its open-source design and compatibility with CAN 2.0A, 2.0B, and CAN FD standards.

4. SETUP INSTRUCTIONS

4.1 Hardware Connection

1. **Connect to Computer:** Use the provided USB Type-C cable to connect the module's Type-C port to a USB port on your computer. The module will enumerate as a virtual serial port.
2. **Connect to CAN Bus:** Use the connection cable (jumper wires) to connect the module's CAN interface (green terminal block) to your CAN bus network. Ensure correct polarity for CAN High (CAN_H) and CAN Low (CAN_L).
3. **Power Indicator:** The PWR indicator light on the module will illuminate when power is supplied via the USB connection.

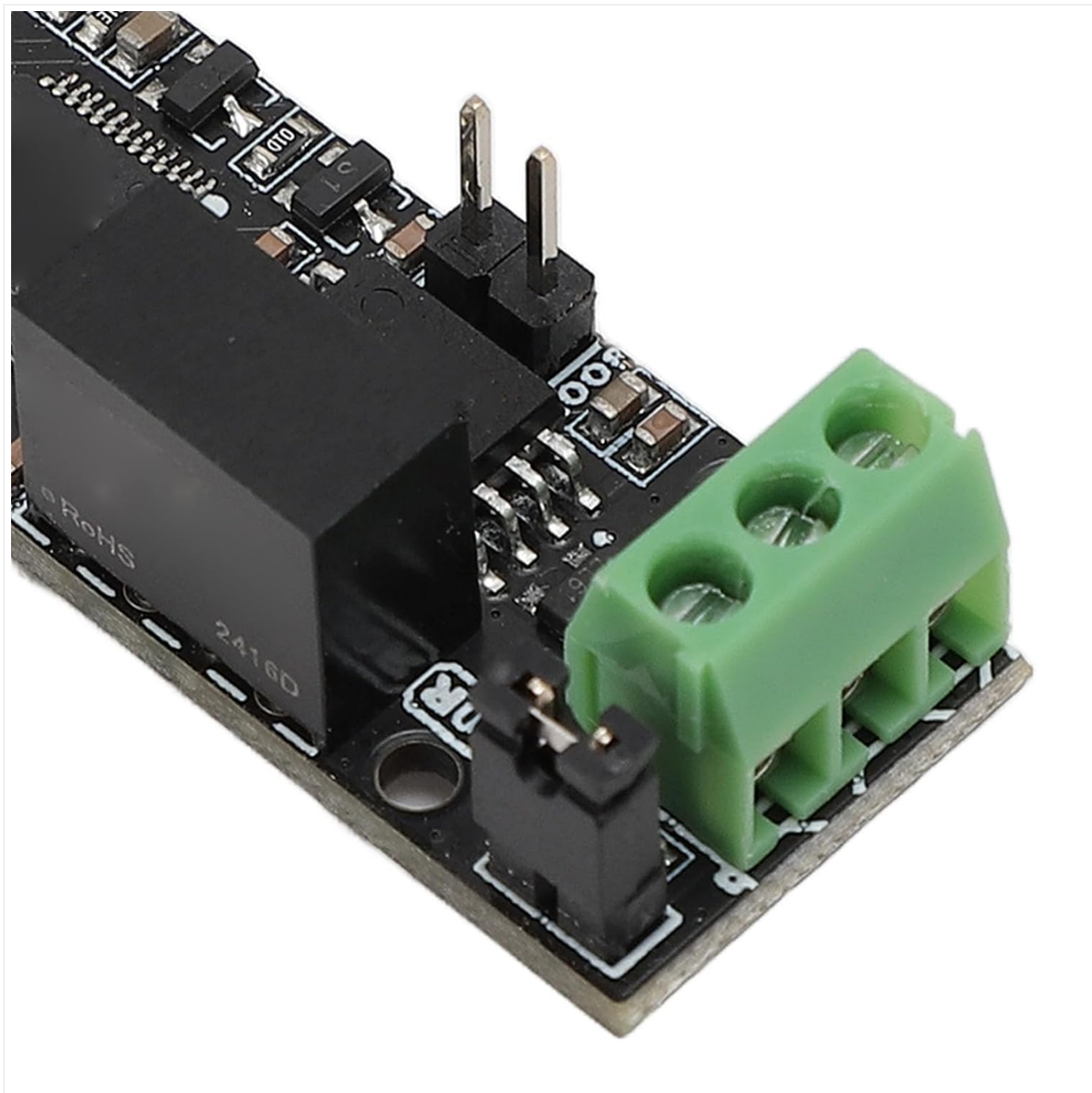


Image: A close-up view of the green terminal block, which serves as the CAN interface for connecting to a CAN bus network.

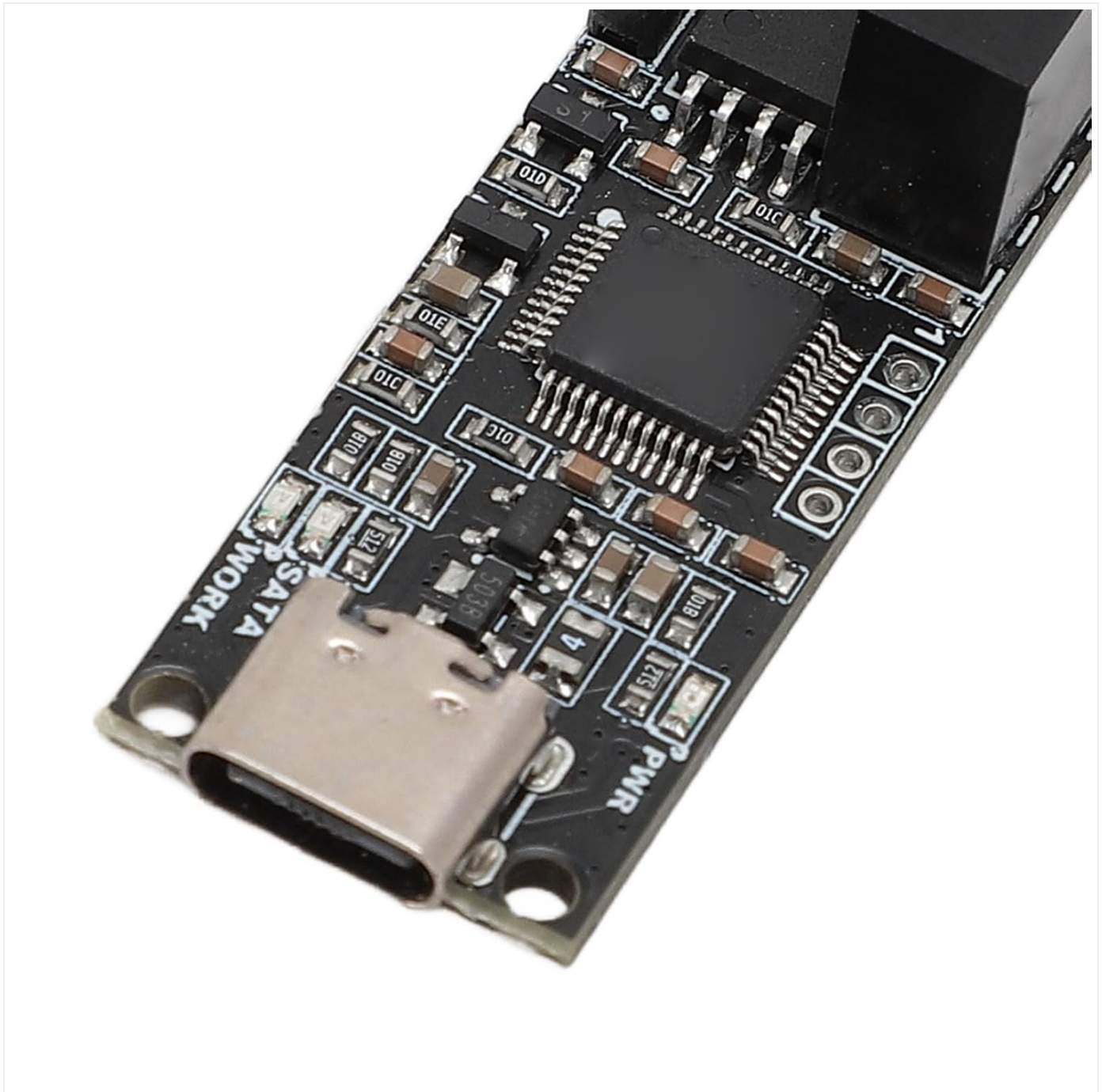


Image: A detailed view of the Type-C USB port and the PWR indicator light on the module.

4.2 Software Setup

The module is compatible with firmware such as candleLight and slcan. For Linux systems, when using candleLight firmware, the module enumerates as a local CAN interface, providing stable operation.

- **Driver Installation:** Typically, modern operating systems will automatically recognize the device as a virtual serial port. If not, refer to the specific driver requirements for the chosen firmware (e.g., candleLight, slcan).
- **Firmware Configuration:** Follow the documentation for your chosen CAN bus software (e.g., candump, cansend on Linux with can-utils) to configure the virtual serial port or CAN interface.

5. OPERATING INSTRUCTIONS

5.1 Basic Operation

1. **Power On:** Connect the module to your computer via USB. The PWR LED will light up.

2. **CAN Bus Communication:** Once connected and configured with appropriate software, the module can send and receive CAN messages. The WORK/SATA LED will blink to indicate data activity.
3. **Monitoring:** Use CAN bus monitoring software to observe traffic on the CAN network.
4. **Sending Messages:** Use CAN bus sending utilities to transmit messages onto the CAN network.

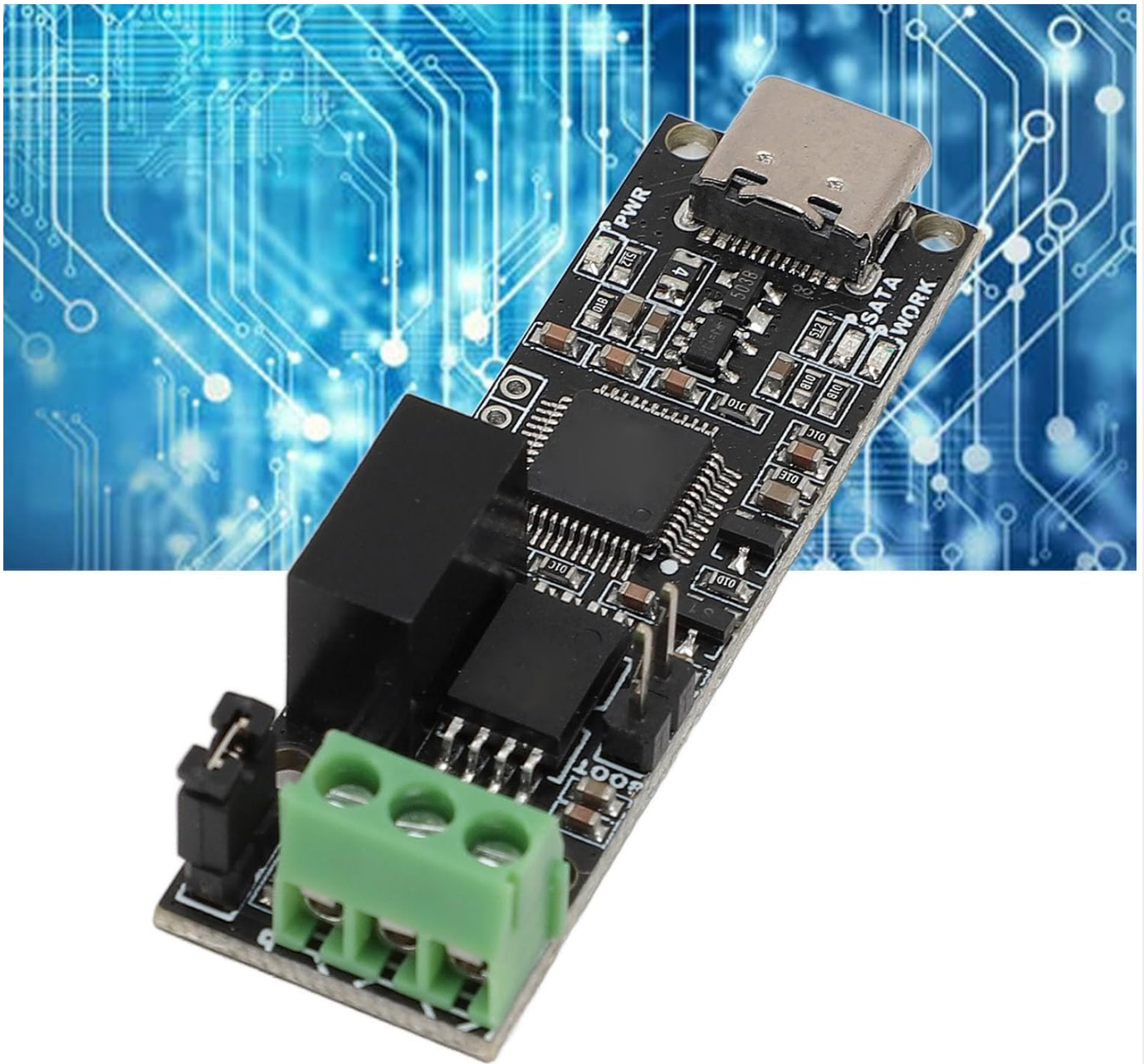


Image: An overhead view of the CAN analyzer module, showing the layout of components including the Type-C USB port, PWR indicator, WORK/SATA indicator, SWD pins, BOOT short cap, terminal resistant short circuit cap, and CAN interface.

5.2 Firmware Upgrade

The module supports online firmware upgrades and DFU (Device Firmware Upgrade) mode. Refer to the specific firmware documentation (e.g., for candleLight or slcan) for detailed instructions on how to perform firmware updates.

- **DFU Mode:** To enter DFU mode, typically a specific jumper or button sequence is required during power-up. Consult the firmware's official guide.
- **Online Upgrade:** Some firmware versions may support direct upgrades through a connected application.

6. MAINTENANCE

- **Cleaning:** Keep the module clean and free from dust. Use a soft, dry cloth for cleaning. Avoid liquid cleaners.
- **Storage:** Store the module in a dry, cool environment away from direct sunlight and extreme temperatures.
- **Handling:** Handle the module with care to avoid physical damage to components or connectors. Avoid static discharge.
- **Firmware Updates:** Regularly check for and apply firmware updates from the official sources of your chosen firmware (e.g., candleLight, slcan) to ensure optimal performance and access to new features or bug fixes.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Module not recognized by computer.	◦ Faulty USB cable. ◦ USB port issue. ◦ Missing drivers.	◦ Try a different USB cable. ◦ Connect to another USB port on your computer. ◦ Ensure necessary drivers for the chosen firmware (e.g., candleLight, slcan) are installed.
No CAN bus communication.	◦ Incorrect CAN_H/CAN_L connection. ◦ Incorrect CAN bus termination. ◦ Software configuration error. ◦ CAN bus not active.	◦ Verify CAN_H and CAN_L connections. ◦ Ensure proper CAN bus termination (120 Ohm resistors at each end of the bus). ◦ Check software settings for baud rate, CAN ID filters, etc. ◦ Confirm the CAN bus itself is operational and transmitting data.
Module not entering DFU mode.	◦ Incorrect procedure for DFU mode entry. ◦ Hardware issue.	◦ Refer to the specific firmware documentation for the correct DFU mode entry sequence (e.g., shorting BOOT pins). ◦ Contact support if the issue persists.

8. SPECIFICATIONS

Feature	Detail
Microprocessor	ARM Cortex M4 STM32G431C8T6
Operating Frequency	Up to 170MHz
Communicating Chip	TJA1051T/3
Voltage	DC 3.3V-5V
CAN FD Support	Yes
CAN 2.0 A/B Support	Yes

Feature	Detail
Firmware Compatibility	candleLight, slcan
Transfer Rate	1M, 2M, 5M
ESD Guard	30kV
Signal Isolation	5.7kV rms
Connector Type	Type C USB
Dimensions (Approx.)	52 mm (L) x 16 mm (W) x 10.5 mm (H)

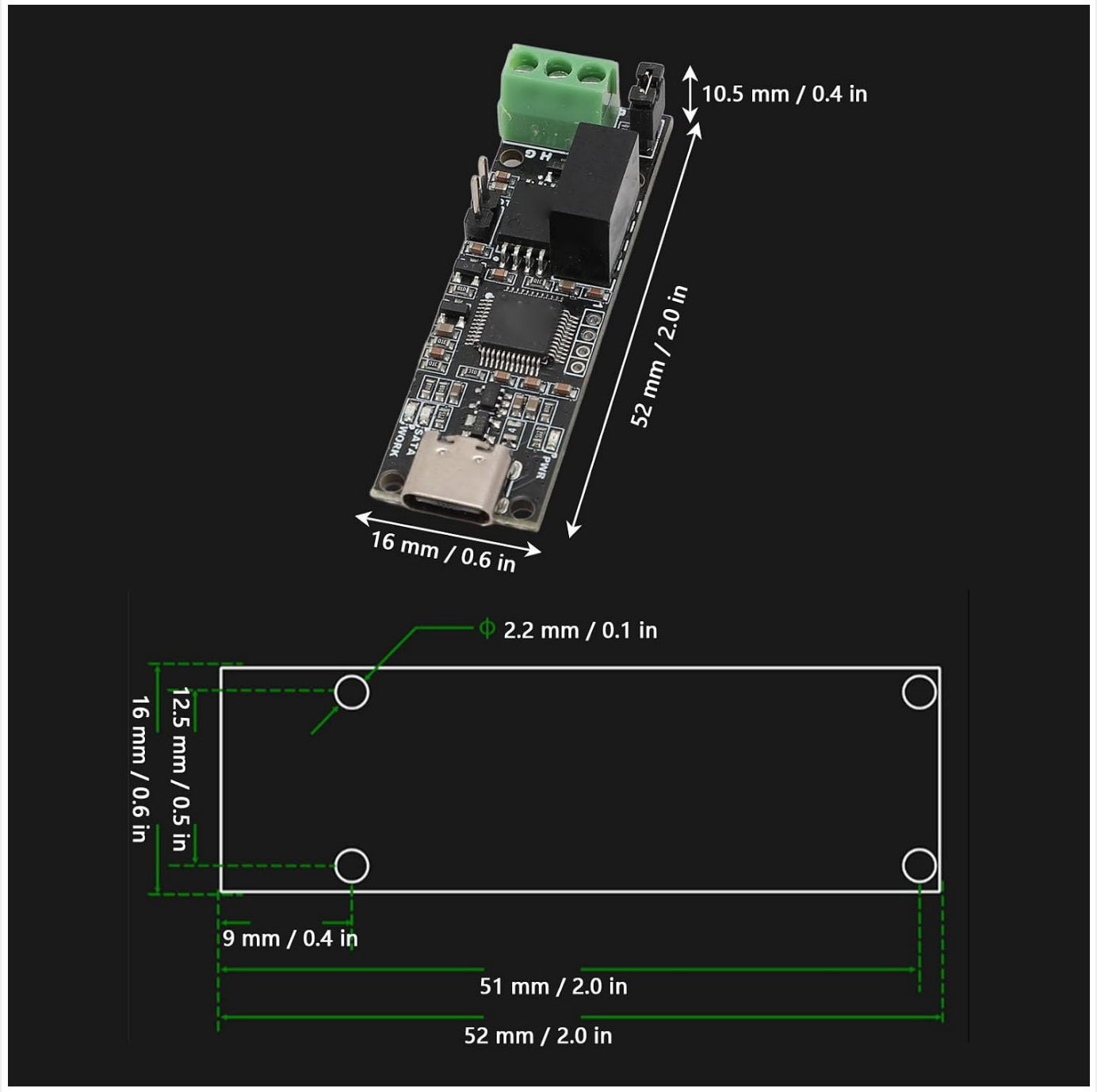


Image: A technical drawing illustrating the dimensions of the Serounder USB to CAN module, including length, width, and height measurements.

9. WARRANTY INFORMATION

This product comes with a manufacturer's warranty for 90 days from the date of purchase. The warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by misuse, accident, unauthorized modification, or improper installation.

For warranty claims or service, please retain your proof of purchase and contact the seller or manufacturer directly.

10. SUPPORT AND CONTACT

For technical assistance, troubleshooting, or general inquiries regarding your Serounder USB to CAN Module Converter Adapter, please refer to the following resources:

- **Manufacturer Website:** Visit the official Serounder website for product updates, FAQs, and additional resources.
- **Seller Support:** Contact the seller, Serounder-m, through the Amazon platform for purchase-related support.
- **Community Forums:** For open-source firmware like candleLight or scan, community forums can be a valuable resource for advanced usage and troubleshooting.

11. PRODUCT VIDEO DEMONSTRATION



Video: A short demonstration of the Serounder USB to CAN Module Converter Adapter, showcasing its physical appearance and basic functionality. This video is 6 seconds long and provides a quick overview.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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