

NEXTION NX4832T035

NEXTION NX4832T035 Single Board Computer

USER MANUAL

1. Introduction

This manual provides comprehensive instructions for the NEXTION NX4832T035 Single Board Computer. The NX4832T035 is a Human Machine Interface (HMI) display designed to provide a control and visualization interface for various electronic projects and systems. It features a 3.5-inch resistive touch screen and can be integrated with microcontrollers like Arduino or Raspberry Pi via serial communication. Please read this manual thoroughly before operating the device to ensure proper usage and longevity.

2. Safety Information

- **Power Supply:** Ensure the power supply voltage and current match the device's requirements. Incorrect power can damage the unit.
- **Handling:** Handle the display with care. Avoid dropping or subjecting it to strong impacts.
- **Environment:** Do not expose the device to extreme temperatures, high humidity, dust, or corrosive environments.
- **Static Electricity:** Take precautions against electrostatic discharge (ESD) when handling the board, as it can damage sensitive electronic components.
- **Modifications:** Do not attempt to modify the hardware. Unauthorized modifications can void the warranty and pose safety risks.

3. Package Contents

Verify that all items are present in the package:

- NEXTION NX4832T035 Single Board Computer
- Connection Cable (typically a 4-pin serial cable)
- *(Additional accessories may vary by retailer)*

4. Product Overview

The NEXTION NX4832T035 features a 3.5-inch TFT LCD with a resistive touch panel. It integrates a powerful processor and memory to handle graphical user interface (GUI) elements independently, offloading processing from the host microcontroller. Communication is primarily handled via a serial UART interface.

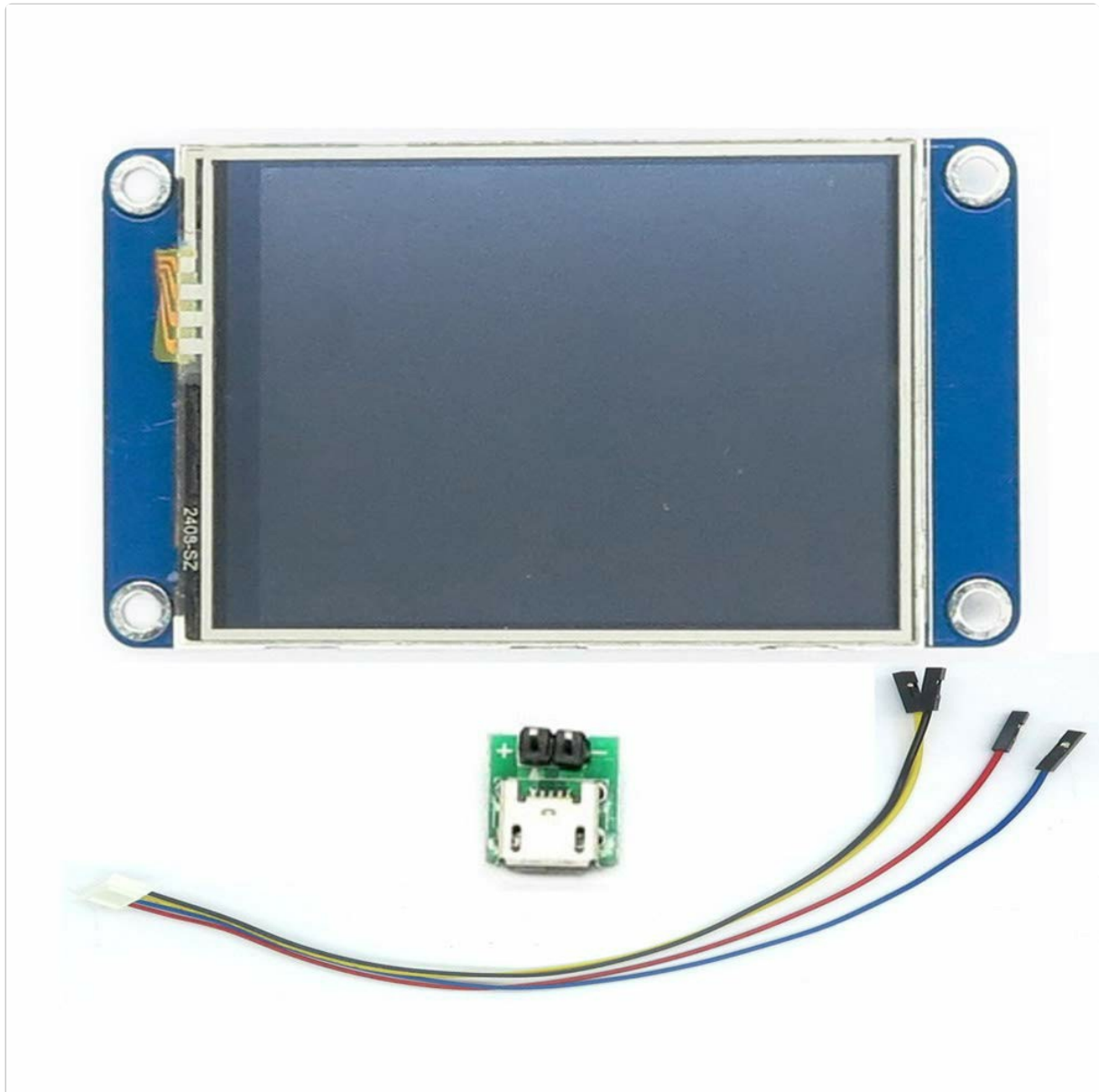


Figure 4.1: Front view of the NEXTION NX4832T035 Single Board Computer, showing the 3.5-inch display and its compact form factor.

Key Features:

- 3.5-inch TFT LCD with 480x320 resolution
- Resistive touch panel
- Integrated processor for GUI rendering
- Serial (UART) interface for communication with host microcontrollers
- MicroSD card slot for firmware and project uploads

5. Setup

5.1. Hardware Connection

1. **Power Connection:** Connect the provided power cable to the appropriate power pins on the NX4832T035 and to a stable 5V DC power source. Ensure correct polarity (VCC to 5V, GND to Ground).
2. **Serial Communication:** Connect the TX (Transmit) pin of the NX4832T035 to the RX (Receive) pin of your host microcontroller (e.g., Arduino, Raspberry Pi), and the RX pin of the NX4832T035 to the TX pin of your host microcontroller. Ensure both devices share a common ground.

5.2. Software Setup (Nextion Editor)

The NX4832T035 requires a graphical user interface (GUI) project to be uploaded to its internal memory. This is done using the Nextion Editor software, which is compatible with Windows operating systems.

1. **Download Editor:** Download and install the latest version of the Nextion Editor from the official NEXTION website.
2. **Design GUI:** Use the editor to design your desired user interface, including buttons, text fields, progress bars, images, and other elements.
3. **Compile Project:** Compile your project within the Nextion Editor. This generates a .tft file.
4. **Upload to Device:**
 - **Via MicroSD Card (Recommended):** Copy the compiled .tft file to a formatted microSD card. Insert the card into the NX4832T035's microSD slot and power on the device. The firmware will automatically update. Remove the card after the update is complete and power cycle the device.
 - **Via Serial Port:** Connect the NX4832T035 to your computer via a USB-to-TTL serial adapter. Use the upload function in the Nextion Editor to transfer the .tft file directly.

5.3. Host Microcontroller Integration

After uploading the GUI project to the NX4832T035, you will need to program your host microcontroller to communicate with the display. This involves sending commands to update display elements (e.g., changing text, updating progress bars) and receiving events from the display (e.g., button presses).

- Utilize the official NEXTION libraries for your chosen microcontroller platform (e.g., Arduino library) to simplify communication.
- Alternatively, send raw serial commands according to the NEXTION instruction set.

6. Operating Instructions

6.1. Basic Interaction

Once powered on and with a project loaded, the NX4832T035 will display your designed interface. Interact with the display using the resistive touch screen. A firm touch is typically required for input registration.

6.2. Communication Protocol

The NX4832T035 communicates with the host microcontroller via serial commands. These commands allow the host to:

- Update the value or text of display components.
- Change pages or screens on the display.
- Read values from display components.

The display sends events back to the host microcontroller when user interactions occur (e.g., a button is pressed, a slider is moved). Refer to the NEXTION documentation and editor for specific command syntax and event structures.

7. Maintenance

- **Cleaning:** Use a soft, dry, lint-free cloth to clean the screen. For stubborn smudges, lightly dampen the cloth with water or a screen-safe cleaner. Avoid abrasive materials or harsh chemicals.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures when not in use.
- **Firmware Updates:** Periodically check the official NEXTION website for firmware updates for the NX4832T035, which may offer performance improvements or new features.

8. Troubleshooting

8.1. Display Not Powering On

- Verify that the power supply is connected correctly (5V DC) and providing sufficient current.
- Check all power connections for loose wires or incorrect polarity.

8.2. No Response to Touch Input

- Ensure you are applying a firm touch, as the NX4832T035 uses a resistive touch panel.
- Confirm that your GUI project includes touch events for the elements you are trying to interact with.

8.3. Communication Issues with Host Microcontroller

- Double-check the TX/RX wiring between the NX4832T035 and your microcontroller. TX should connect to RX, and RX to TX.
- Ensure both devices share a common ground connection.
- Verify that the baud rates are correctly configured and match on both the NX4832T035 (set in Nextion Editor) and your host microcontroller.
- Confirm that the communication protocol and command syntax in your microcontroller's code match the NEXTION specifications.

8.4. Font Display Issues

- The Nextion Editor's font handling can sometimes result in non-ideal font rendering. Consider using custom images for text elements if precise font appearance is critical.
- Experiment with different font sizes and styles within the Nextion Editor to find the best compromise.

9. Specifications

Parameter	Value
Screen Size	3.5 Inches
Screen Resolution	480 x 320 pixels
Processor	Tegra

Memory Storage Capacity	16 MB
Connectivity Technology	USB (for programming), Serial (UART)
Item Dimensions (LxWxH)	4.7 x 3 x 0.8 inches (119.38 x 76.2 x 20.32 mm)
Item Weight	2.89 ounces (81.93 grams)
Operating System	Android (<i>Note: This refers to the processor's capability, not the device's primary OS for HMI functions.</i>)

10. Warranty and Support

The NEXTION NX4832T035 Single Board Computer is covered by a standard manufacturer's warranty against defects in materials and workmanship. For specific warranty terms and conditions, please refer to the documentation provided with your purchase or visit the official NEXTION website.

For technical support, troubleshooting assistance, or to access additional resources such as software downloads and community forums, please visit the official NEXTION support portal or contact their customer service directly. Providing your product model number (NX4832T035) and any relevant purchase information will help expedite your support request.