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› Hosyond 4.0 Inch ESP32 Display Resistive Touchscreen with Acrylic Case User Manual

Hosyond ESP32 Display 4.0 Inch

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Model: ESP32 Display 4.0 Inch

For technical support or additional resources, please visit the [Hosyond Store on Amazon](#).

1. INTRODUCTION

The Hosyond 4.0 Inch ESP32 Display is a versatile resistive touchscreen module designed for various Internet of Things (IoT) and embedded projects. It features an ESP32-32E module, a 4.0-inch 320x480 resolution TFT LCD with an ILI9341 driver, and comes with a protective acrylic case. This module offers extensive connectivity options including Wi-Fi and Bluetooth, multiple expansion interfaces, and support for external power sources like lithium batteries. It is also compatible with specific firmware like NM MINER and NERDMINER for specialized applications.



Image 1.1: Hosyond 4.0 Inch ESP32 Display with Acrylic Case.

2. WHAT'S IN THE BOX

Please verify that all components are present upon unboxing:

- 1 x Hosyond 4.0 Inch ESP32 Display Module
- 1 x USB Cable (Type-C)
- 1 x Touch Pen
- 1 x 4Pin Connector Cable
- 1 x Acrylic Protective Case
- 1 x Packaging Box

3. SPECIFICATIONS

Detailed technical specifications for the Hosyond 4.0 Inch ESP32 Display:

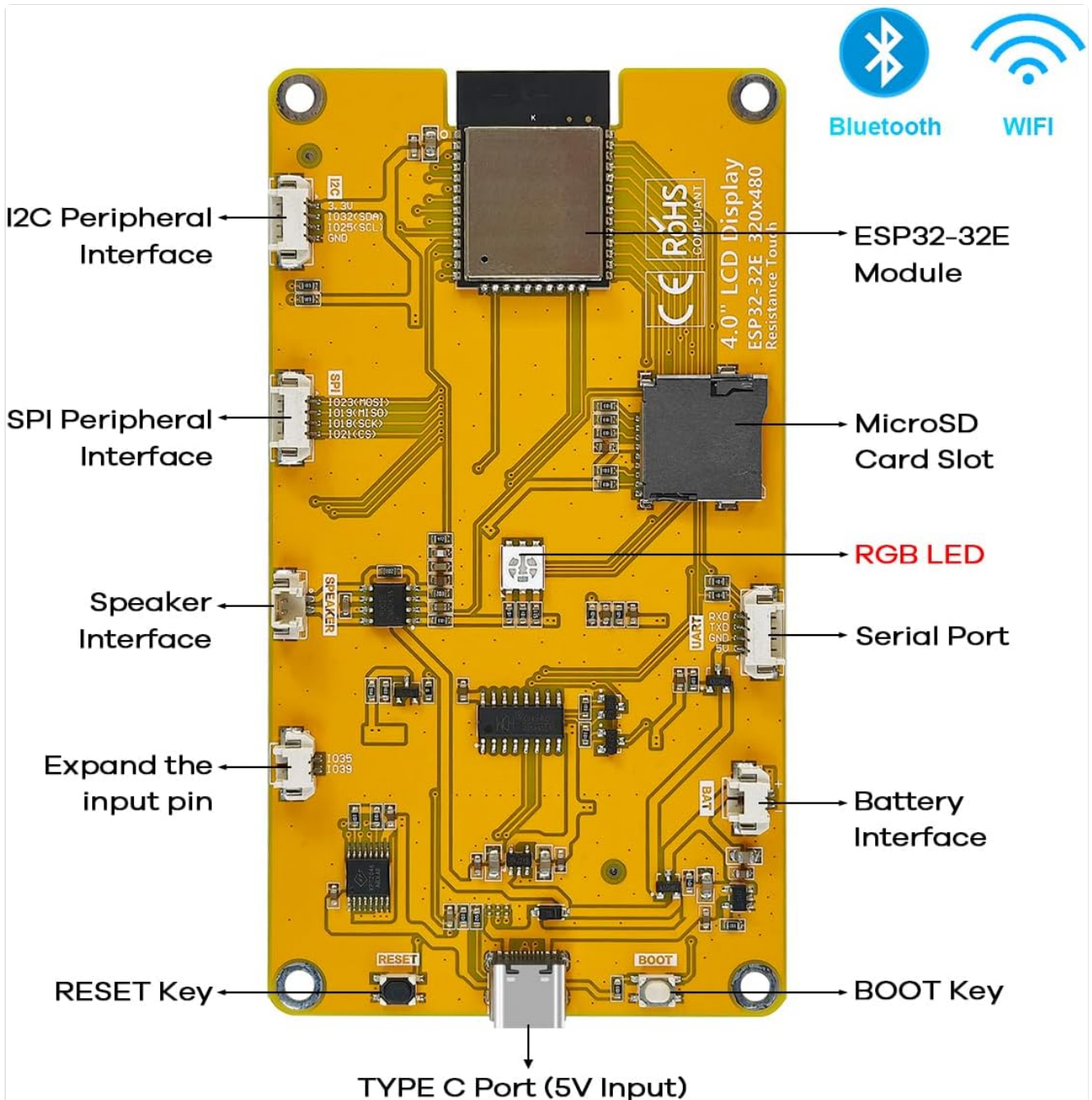


Image 3.1: Detailed specifications and physical dimensions of the display module.

Feature	Detail
Module	ESP32-32E
CPU	ESP32-D0WD-V3, Xtensa dual-core 32-bit LX6 microprocessor
Main Frequency	240MHz (maximum)
Storage	448KB ROM + 520KB SRAM + 16KB RTC SRAM + 4MB external QSPI Flash
Wi-Fi	2.4GHz, 802.11b/g/n mode
Bluetooth	Bluetooth V4.2 BR/EDR and Bluetooth LE standards
Driver IC	ST7796S
Display Interface	4-Line SPI (connected to ESP32)

Feature	Detail
Screen Type	TN TFT
Screen Size	4.0 inch
Resolution	320x480 pixels
Touch Screen Type	Resistive
Dimensions	60.88(W) x 111.11(H) x 5.65(D) mm
Power Supply	Standard TYPE-C interface (5V Input), supports external lithium batteries
Expansion Interfaces	I2C, SPI, UART, Micro TF card slot, Speaker interface, Battery interface

4. SETUP

4.1 Assembly with Acrylic Case

The display module comes with an acrylic protective case. Carefully assemble the case around the display, ensuring all components align correctly. Use the provided installation tools if necessary. The case protects the board and provides a stable enclosure.

4.2 Connecting the Module

- Power and Data Connection:** Connect the module to your computer using the supplied USB Type-C cable. This port serves for both power supply and program uploading.
- Peripheral Connections:** Utilize the various expansion interfaces as needed for your project. Refer to Image 4.1 for the layout of the board and its interfaces.

Pre-installed Demo Program



Fully Compatible with Miner

Please choose the following two Miner firmwares to burn into this screen



NerdMiner (free): Fully Compatible



NMMiner (2.99/device): Fully Compatible

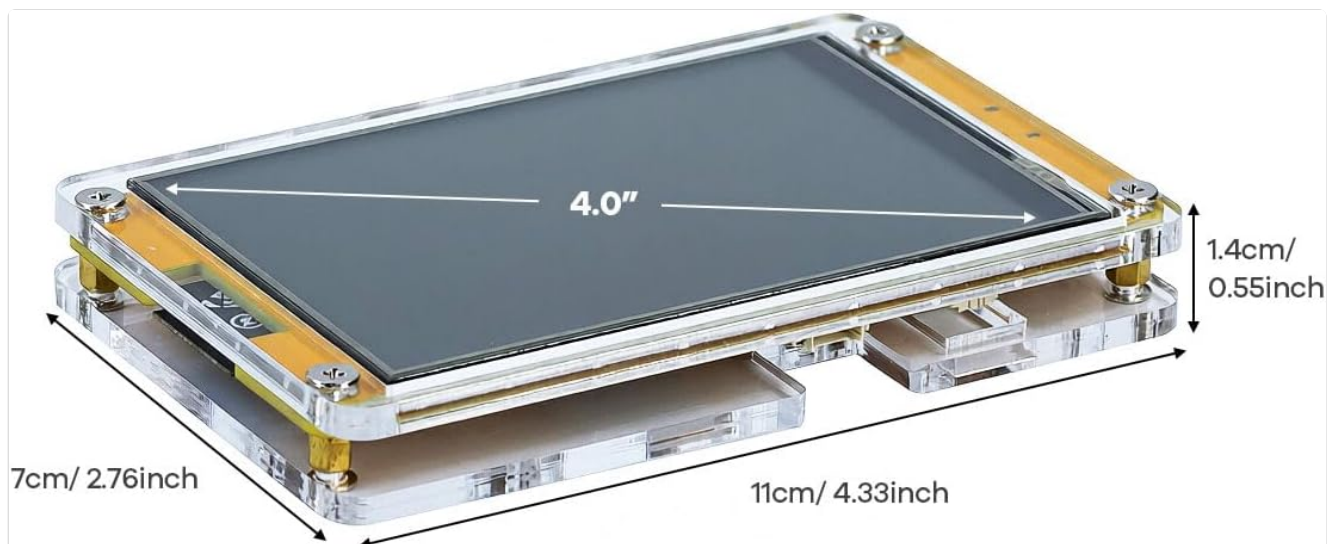


Note: The compatibility of each model is different, please check the product page.
Note: Miner software is NOT Pre-installed, so you need to upload it yourself.

Image 4.1: Hosityond ESP32 Display board layout with labeled interfaces including I2C, SPI, Speaker, Serial Port, Battery Interface, MicroSD Card Slot, RGB LED, RESET Key, BOOT Key, and TYPE C Port.

4.3 Initial Firmware Upload

The module is compatible with various firmware, including NM MINER and NERDMINER. Note that the miner software is **not pre-installed**; you will need to upload it yourself. For NM MINER, ensure you use the firmware file version: esp32-32e-lcd-display-40inch from the official flash.nmminer.com webpage.



Screen Size	4.0 inch
Screen Type	TN TFT
Resolution	320*480 (pixels)
Driver IC	ST7796S
Display Interface	4-Line SPI(connected to ESP32)
Number of Colors	Max: 262K(RGB666) Commonly: 65K(RGB565)
View Angle	12 O'CLOCK
Brightness(TYP)	450cd/m2
Wifi	2.4GHz, 802.11b/g/n mode
Bluetooth	BT V4.2 BR/EDR BLE standards
Module	ESP32-32E
Touch Screen Type	Resistive touch screen

Image 4.2: The display module demonstrating compatibility with NerdMiner and NMMiner firmware.

Your browser does not support the video tag.

Video 4.1: A demonstration of the Hosyond 4.0 Inch ESP32 Display with its protective case, showcasing its resistive touchscreen functionality and general appearance.

5. OPERATING INSTRUCTIONS

5.1 Resistive Touchscreen Interaction

The 4.0-inch display features a resistive touchscreen. Use the provided touch pen or a similar blunt, non-sharp object for interaction. Resistive touchscreens respond to pressure, allowing for precise input for menus, buttons, and basic user interfaces.

Graphical User Interface Development

Use C language to custom-develop your own GUI interface

Human-machine Interface

The Human-machine Interface (also known as the user interface) is the medium of interaction and information exchange between the system and the user



LVGL GUI Development

LVGL is a free, open-source graphics library that provides everything you need to create embedded GUI with the easy-to-use graphical elements, beautiful visual effects and low memory requirement.

Image 5.1: Interaction with the resistive touchscreen using the included stylus.

5.2 Programming and Development

The ESP32-32E module provides a powerful platform for custom development. You can use C language to create your own Graphical User Interface (GUI). The module supports various development environments and libraries. For GUI development, [LVGL \(Light and Versatile Graphics Library\)](#) is a free, open-source graphics library that can be used to create embedded GUIs with graphical elements, visual effects, and low memory requirements.



Image 5.2: Concepts for Graphical User Interface (GUI) development and human-machine interaction.

5.3 Connectivity and Expansion

The module supports Wi-Fi and Bluetooth for flexible wireless communication. It also offers multiple expansion interfaces (I2C, SPI, UART) for connecting various peripherals. A built-in micro TF card slot allows for convenient storage expansion. External speakers can be connected via the speaker interface for audio playback.



Image 5.3: Overview of the display's features including ESP32 Processor, 2.4GHz Wi-Fi, BLE, 262K Color support, and Type-C Port, along with connectivity to various devices.

5.4 Battery Operation

The module supports external lithium batteries and includes an integrated battery charging management circuit. This allows for portable applications and ensures safe charging and discharging of connected batteries.

6. MAINTENANCE

To ensure the longevity and optimal performance of your HOSYOND ESP32 Display:

- **Cleaning:** Use a soft, dry, anti-static cloth to clean the screen and case. Avoid using harsh chemicals or abrasive materials.
- **Handling:** Handle the module with care. Avoid dropping it or subjecting it to strong impacts.
- **Environment:** Operate and store the module in a dry environment, away from extreme temperatures,

humidity, and direct sunlight.

- **Connections:** Ensure all cable connections are secure but do not apply excessive force when connecting or disconnecting.

7. TROUBLESHOOTING

If you encounter issues with your Hosyond ESP32 Display, refer to the following common problems and solutions:

- **Display Not Powering On:**

- Ensure the USB Type-C cable is securely connected to both the module and a power source.
- Verify that the power source (e.g., computer USB port, power adapter) provides sufficient power (5V). Some PC USB ports may not supply enough current, especially for initial flashing or if other peripherals are connected. Try a powered USB hub or a dedicated 5V power adapter.

- **Screen Remains Blank After Power On:**

- Confirm that firmware has been successfully uploaded to the ESP32 module. The display will not show anything without a program running.
- Check your code for display initialization errors or incorrect pin mappings for the ILI9341 driver.

- **Touchscreen Not Responding:**

- Ensure you are using the resistive touch pen or a suitable blunt object.
- Verify that the touchscreen driver is correctly initialized in your firmware.
- Check for any physical damage to the touchscreen surface.

- **Programming/Firmware Upload Issues:**

- Ensure the correct COM port is selected in your development environment.
- Press and hold the **BOOT** button, then briefly press the **RESET** button, and release **BOOT** to enter programming mode.
- Confirm you are using the correct firmware file for the ESP32-32E module and 4.0-inch display variant.
- If using a PC, ensure necessary USB drivers are installed.

- **MicroSD Card Read Issues:**

- Ensure the MicroSD card is inserted correctly into the slot.
- Verify the MicroSD card is formatted correctly (e.g., FAT32).
- Test with a different MicroSD card to rule out card defects.

- **Wi-Fi/Bluetooth Connectivity Problems:**

- Check your firmware code for correct Wi-Fi/Bluetooth initialization and credentials.
- Ensure the module is within range of the Wi-Fi network or Bluetooth device.
- Verify that the antenna is not obstructed or damaged.

8. WARRANTY INFORMATION

This Hosyond 4.0 Inch ESP32 Display Resistive Touchscreen is sold without an explicit warranty. Please refer to the retailer's return policy for details on returns or exchanges for defective products.

9. SUPPORT

For further assistance, technical documentation, or community support related to ESP32 development, please consult the following resources:

- **Hosyond Store:** Visit the official [Hosyond Store on Amazon](#) for product updates and contact information.
- **ESP32 Documentation:** The official Espressif Systems website provides extensive documentation and development guides for the ESP32 platform.
- **Online Forums and Communities:** Engage with the broader ESP32 and Arduino communities on platforms like GitHub, Stack Overflow, and dedicated electronics forums for project ideas and troubleshooting advice.

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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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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.

Submit question