

Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

[manuals.plus](#) /

› [YEJMKJ](#) /

› [YEJMKJ ESP32 S3 N16R8 Development Board User Manual](#)

YEJMKJ ESP32 S3 Development Board N16R8

YEJMKJ ESP32 S3 N16R8 Development Board User Manual

1. OVERVIEW

This manual provides essential instructions for the YEJMKJ ESP32 S3 N16R8 Development Board. This board is a versatile microcontroller unit (MCU) module featuring the ESP32-S3 chip, integrating Wi-Fi and Bluetooth Low Energy (BLE) functions. It is designed for various applications, including smart home devices, industrial automation, and wearable technology.

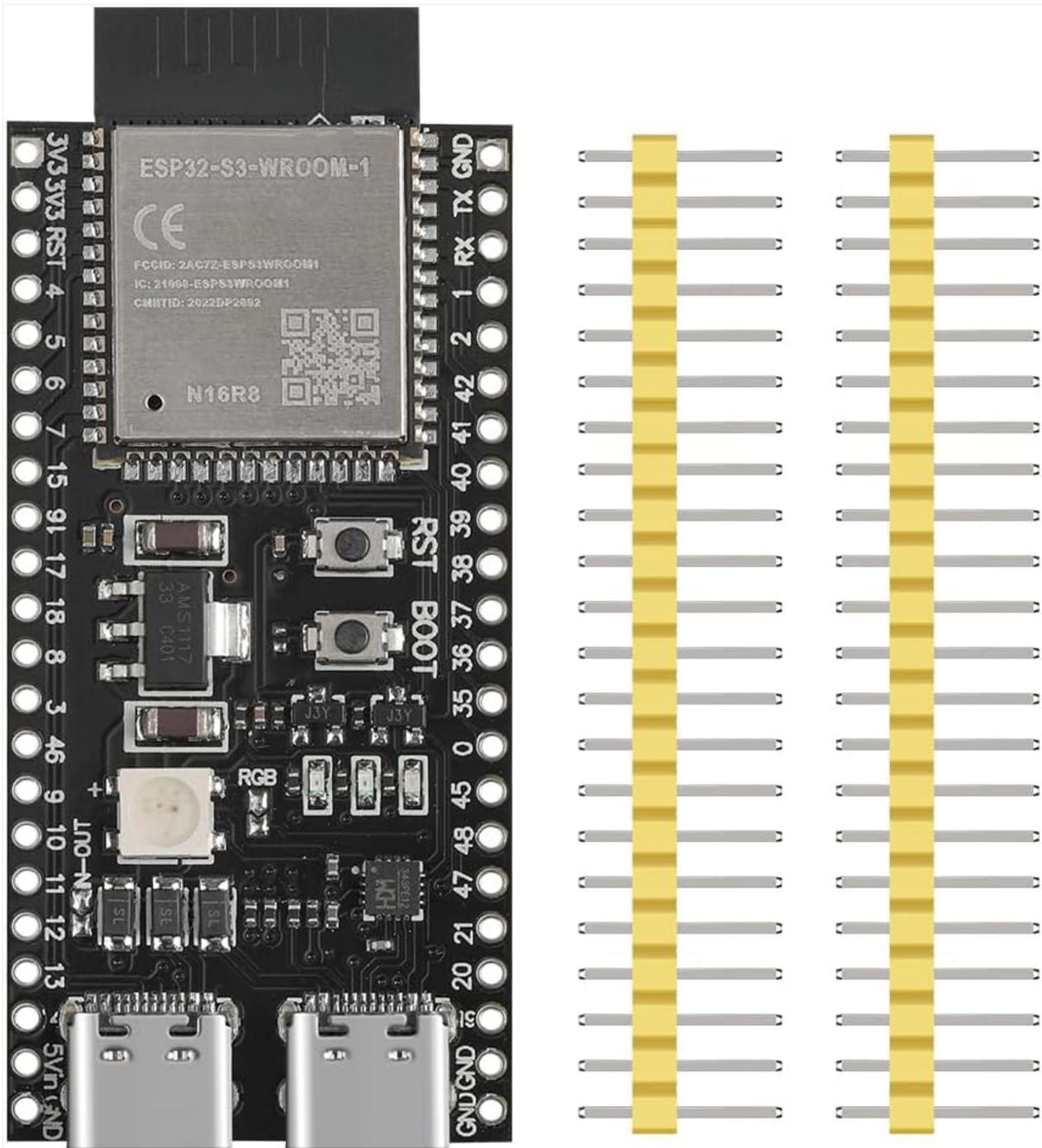


Image 1.1: YEJMKJ ESP32 S3 N16R8 Development Board with included pin headers.

The board offers dual Type-C USB ports for power and data, AI IoT capabilities, and W2812B RGB lighting. Its compact design and compatibility with popular development tools like Arduino IDE make it suitable for both beginners and experienced developers.

Your browser does not support the video tag.

Video 1.1: An overview of the ESP32-S3 N16R8 Development Board, showcasing its physical appearance and key components.

2. KEY FEATURES

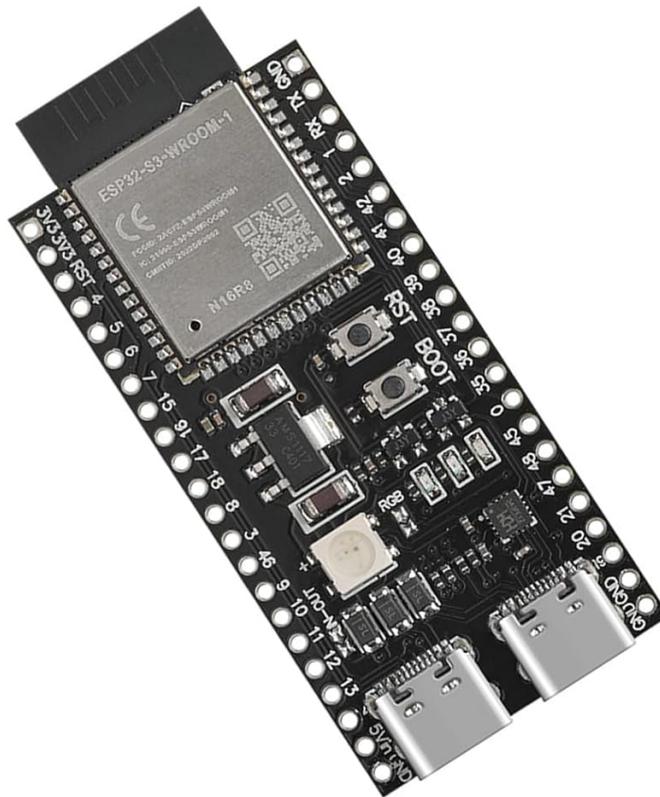
The YEJMKJ ESP32 S3 N16R8 Development Board is equipped with a range of features to support diverse embedded projects:

- **ESP32-S3-WROOM-1 Module:** Integrated Wi-Fi and Bluetooth 5.0 (BLE) for seamless wireless connectivity.

- **Dual Type-C USB Ports:** Provides flexible power and data communication options.
- **AI IoT Functionality:** Supports advanced artificial intelligence and Internet of Things applications.
- **W2812B RGB Lighting:** Integrated RGB LED for visual feedback and creative projects.
- **Memory:** Features 16MB Flash (Quad SPI) and 8MB PSRAM (Octal SPI).
- **GPIO Pins:** Offers 31 programmable input/output pins.
- **Peripherals:** Includes ADC, DAC, I2C, SPI, UART, and USB OTG.
- **Development Environment Compatibility:** Programmed using environments such as Arduino IDE, MicroPython, and ESP-IDF.

Functionality

ESP-WROOM-32 With WiFi+BLE5.0 connectivity, dual Type-C USB ports, AI IOT functionality, and W2812B RGB lighting, the ESP WROOM 32 S3 offers unparalleled versatility and convenience



YEJMKJ

Image 2.1: The board's functionality, including Wi-Fi, BLE5.0, dual Type-C USB, AI IoT, and W2812B RGB lighting.

ESP32-S3

WiFi & Bluetooth 5 (LE) boards based ESP32-S3-WROOM-1.

Features

- based ESP32-S3-WROOM-1
- 2x Type-C USB (OTG, UART)
- 16MB Flash (Quad SPI)
- 8MB PSRAM (Octal SPI)
- 31x IO
- ADC, DAC, I2C, SPI, UART, USB OTG
- Compatible with MicroPython, Arduino and ESP-IDF
- Default firmware: MicroPython

Tutorials

- [Get started with MicroPython \[S3 series\]](#)
- [Get started with Arduino \[S3 series\]](#)

Technical specs

Operating Voltage	3.3V
Digital I/O Pins	31
Clock Speed	240MHz
Flash	16M Bytes
PSRAM	8M Bytes
Size	63.39*27.94mm
Weight	9g

Image 2.2: Detailed features and technical specifications of the ESP32-S3 development board.

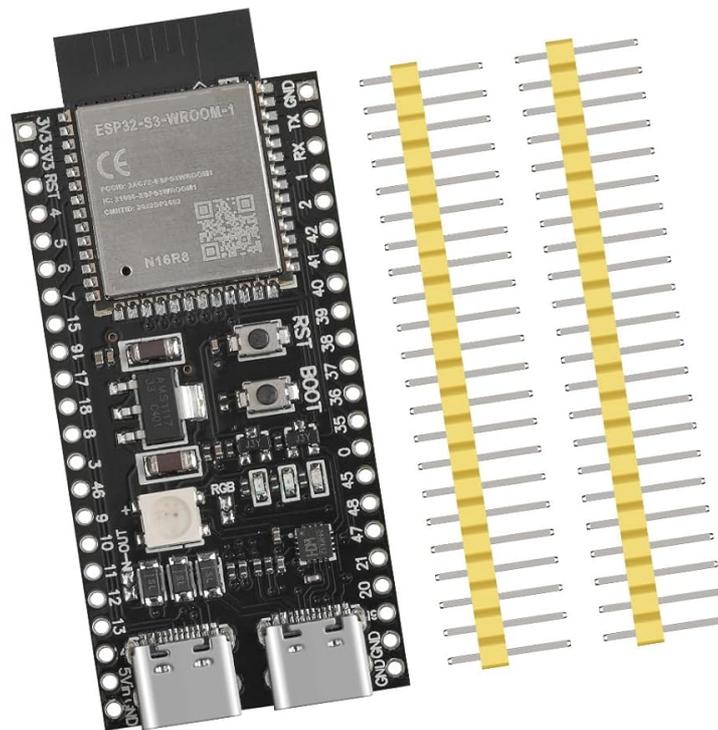
3. SETUP GUIDE

Follow these steps to set up your YEJMKJ ESP32 S3 N16R8 Development Board:

1. **Attach Pin Headers:** If not pre-soldered, carefully solder the included pin headers to the board. Ensure correct orientation.
2. **Connect to Computer:** Use a Type-C USB cable to connect one of the board's USB ports to your computer. The board should power on.
3. **Install Drivers:** Your operating system may automatically install necessary USB-to-serial drivers. If not, you may need to manually install drivers for the USB-to-serial chip (e.g., CP210x or CH340, depending on the board revision).
4. **Install Development Environment:** Download and install your preferred Integrated Development Environment (IDE), such as Arduino IDE or Visual Studio Code with ESP-IDF extension.
5. **Configure IDE:** Add the ESP32 board support package to your IDE. For Arduino IDE, this typically involves adding the ESP32 board manager URL in preferences and then installing the ESP32 boards.
6. **Select Board and Port:** In your IDE, select the correct ESP32-S3 board model and the serial port corresponding to your connected development board.

Development function

ESP32-S3-DevKitC-1 can be programmed using development environments such as Arduino IDE, and ESP32S3 supports multiple programming languages



YEJMKJ

Image 3.1: The development board ready for programming, compatible with various IDEs.

Pin

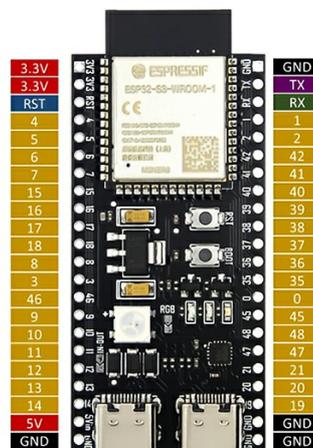


Image 3.2: Pinout diagram for the ESP32-S3 development board, useful for wiring and programming.

4. OPERATING INSTRUCTIONS

Once your development environment is set up, you can begin programming and operating your ESP32 S3

N16R8 board:

- **Programming:** Write your code in C++, MicroPython, or other supported languages within your chosen IDE.
- **Uploading Code:** Compile your code and upload it to the ESP32-S3 board via the USB connection. Ensure the correct board and port are selected.
- **Wi-Fi Connectivity:** Utilize the ESP32-S3's integrated Wi-Fi to connect to local networks, access the internet, or create an access point for other devices.
- **Bluetooth Connectivity:** Use the BLE 5.0 capabilities to communicate with other Bluetooth-enabled devices, such as sensors or mobile phones.
- **GPIO Usage:** Connect external components like sensors, LEDs, and actuators to the GPIO pins to expand the board's functionality. Refer to the pinout diagram for specific pin functions.
- **Power Supply:** The board can be powered via the Type-C USB port. Ensure a stable 5V power supply.

5. MAINTENANCE

To ensure the longevity and optimal performance of your ESP32 S3 N16R8 Development Board, consider the following maintenance guidelines:

- **Handle with Care:** Avoid dropping the board or subjecting it to physical shock.
- **Keep Dry:** Protect the board from moisture and liquids, as these can cause short circuits and damage components.
- **Clean Gently:** If necessary, clean the board with a soft, dry brush or compressed air to remove dust. Avoid using liquid cleaners.
- **Static Discharge:** Take precautions against electrostatic discharge (ESD) when handling the board, as sensitive electronic components can be damaged by static electricity.
- **Proper Storage:** Store the board in an anti-static bag or a protective enclosure when not in use.

6. TROUBLESHOOTING

If you encounter issues with your ESP32 S3 N16R8 Development Board, refer to the following common problems and solutions:

- **Board Not Recognized by Computer:**
 - Ensure the Type-C USB cable is fully inserted and functional. Try a different cable.
 - Verify that the correct USB-to-serial drivers are installed on your computer. Check Device Manager (Windows) or `ls /dev/tty*` (Linux/macOS) for the serial port.
 - Restart your computer and try reconnecting.
- **Code Fails to Upload:**
 - Confirm that the correct board model and serial port are selected in your IDE.
 - Check for compilation errors in your code.
 - Ensure the board is in programming mode (sometimes requires holding down the BOOT button while pressing and releasing the RST button).
 - Verify power supply is stable.
- **Wi-Fi/Bluetooth Not Working:**
 - Double-check your code for correct Wi-Fi/Bluetooth initialization and credentials.

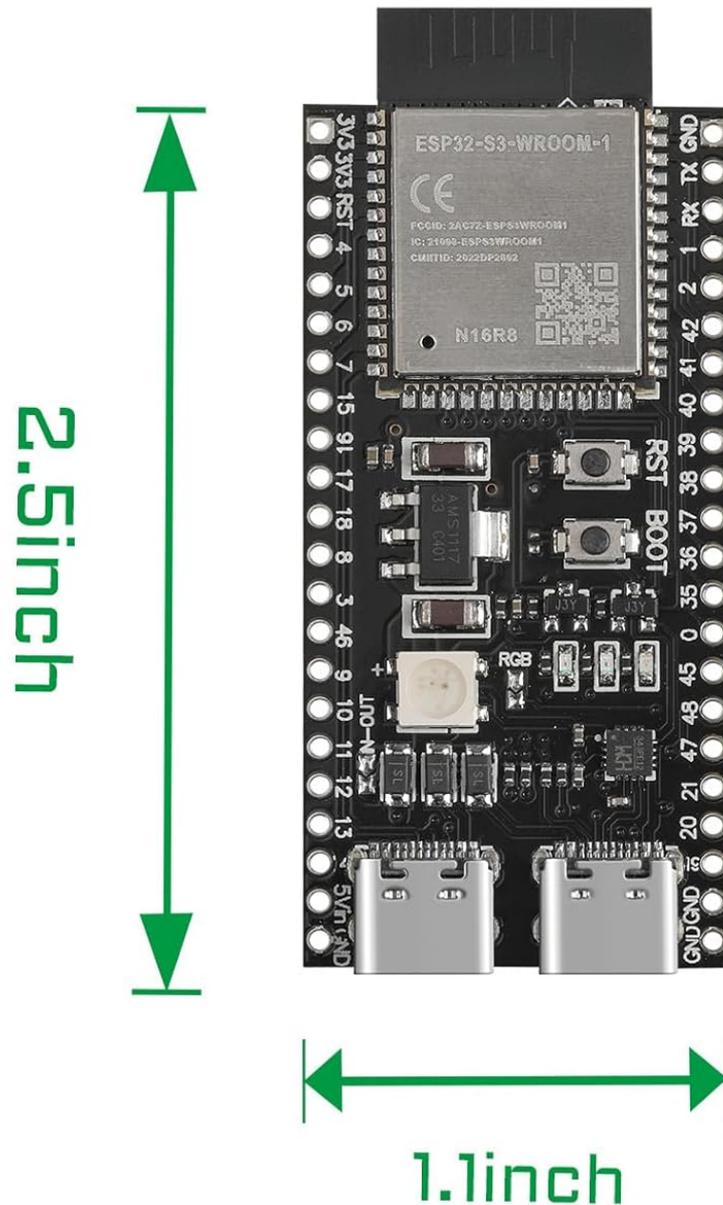
- Ensure antennas (if external) are properly connected.
- Check for interference from other wireless devices.
- **Unexpected Behavior:**
 - Review your code for logical errors.
 - Check all external wiring and connections for shorts or loose contacts.
 - Ensure adequate power supply for the board and any connected peripherals.

7. TECHNICAL SPECIFICATIONS

Below are the detailed technical specifications for the YEJMKJ ESP32 S3 N16R8 Development Board:

Feature	Specification
Model Name	ESP32 S3 Development Board N16R8
Processor	Espressif ESP32-S3
Wireless Connectivity	Wi-Fi, Bluetooth 5.0 (BLE)
RAM	8MB PSRAM (Octal SPI)
Flash Memory	16MB (Quad SPI)
Operating Voltage	3.3V
Digital I/O Pins	31
Clock Speed	240MHz
USB Ports	Dual Type-C (OTG, UART)
Product Dimensions	3.55 x 3.55 x 0.63 inches (approx. 90 x 90 x 16 mm)
Item Weight	0.8 ounces (approx. 22.7 grams)
Operating System Compatibility	Linux (and other OS with appropriate drivers)

PRODUCT SIZE



YEJMKJ

Image 7.1: Product dimensions of the ESP32-S3 development board.

8. WARRANTY AND SUPPORT

For specific warranty information and technical support regarding your YEJMKJ ESP32 S3 N16R8 Development Board, please refer to the documentation provided with your purchase or contact the seller directly. You can also visit the official YEJMKJ store on Amazon for additional product information and support resources:

[Visit the YEJMKJ Store on Amazon](#)



...



...

...

...

...

...



...

...

...

[Waveshare ESP32-S3-Touch-LCD-4.3 Development Board: Features & Guide](#)

Explore the Waveshare ESP32-S3-Touch-LCD-4.3, a powerful microcontroller development board featuring a 4.3-inch capacitive touch display, WiFi, BLE 5, and multiple interfaces like CAN, RS485, and I2C. Learn about its hardware, setup, and sample demos for HMI development.

ESP32-S3
esp-dev-kits Documentation



[ESP32-S3 DevKits Documentation](#)

Comprehensive documentation for Espressif's ESP32-S3 series development boards, including the ESP32-S3-DevKitC-1, ESP32-S3-DevKitM-1, ESP32-S3-USB-OTG, and ESP32-S3-LCD-EV-Board. This guide provides getting started instructions, hardware references, revision details, and related resources for developers.

ESP32-WROOM-32D & ESP32-WROOM-32U
Datasheet



Espressif Systems

[ESP32-WROOM-32D & ESP32-WROOM-32U Datasheet](#)

Comprehensive datasheet detailing the specifications, features, pin definitions, electrical characteristics, and application notes for the Espressif Systems ESP32-WROOM-32D and ESP32-WROOM-32U Wi-Fi and Bluetooth modules.

keyestudio

Keyestudio ESP32 Development Board



Overview
This is a universal WiFi and Bluetooth development board based on ESP32, integrated with USB-to-UART/Bluetooth for wireless serial communication with Arduino.

It has a half-bridge, high-speed I2C/SPI, UART, I2S, as well as IIC. Furthermore, equipped with 8x push-button operating system, which is quite suitable for development of digital and smart home.

www.keyestudio.com

[Keyestudio ESP32 Development Board: Features, Specifications, and Usage Guide](#)

Explore the Keyestudio ESP32 Development Board, a versatile WiFi and Bluetooth enabled microcontroller compatible with Arduino. Learn about its features, specifications, pinout, and test code for IoT and smart home projects.