Saved from manuals.plus.
Open the live page for links to other documents and user manuals.

DWEII WT32-ETH01

WT32-ETH01 ESP32 Module User Manual

Model: WT32-ETH01 | Brand: DWEII

Introduction

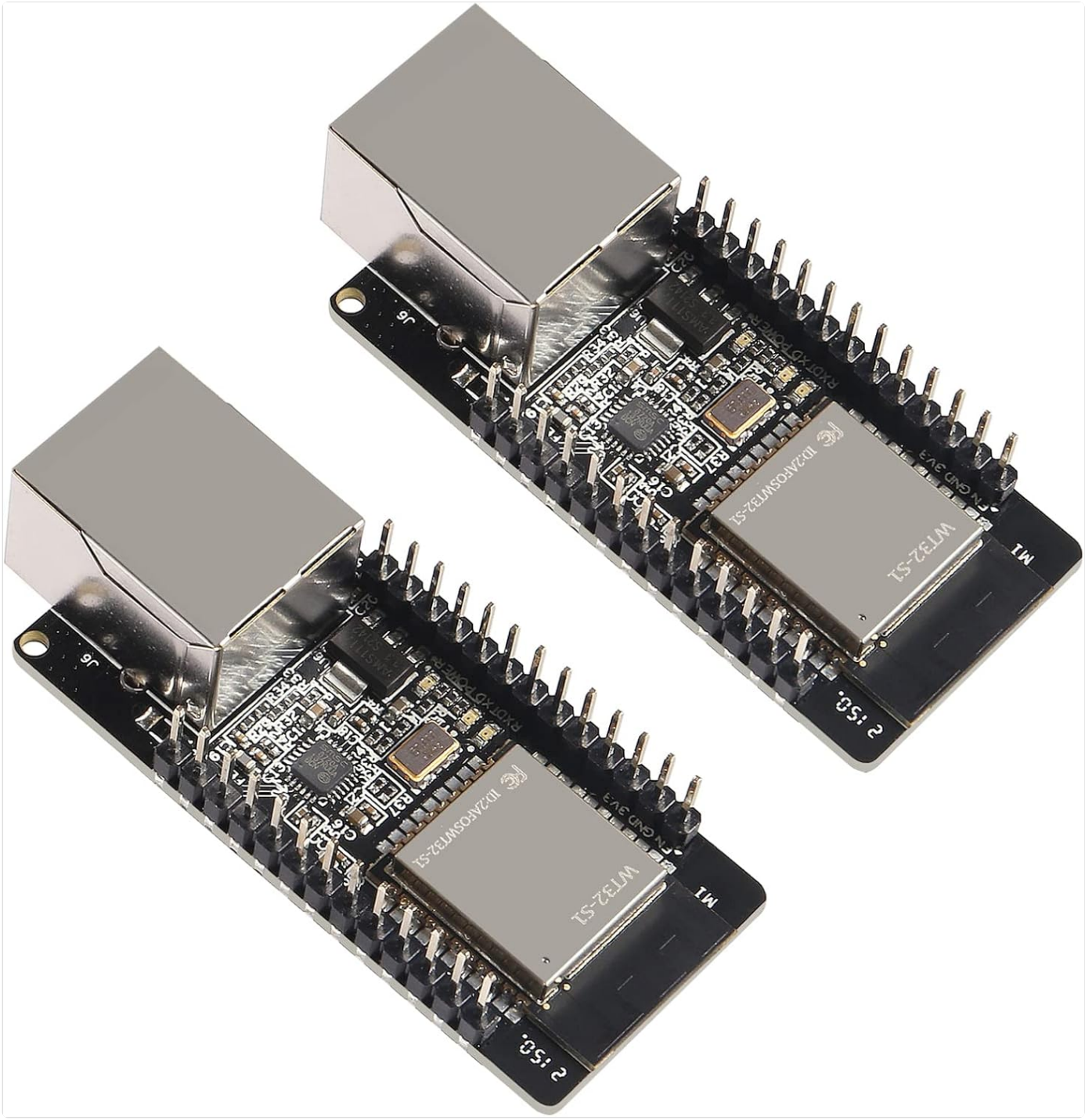


Image: Two DWEII WT32-ETH01 ESP32 modules, showcasing their compact design and integrated Ethernet ports with pre-welded pins.

The DWEII WT32-ETH01 is an advanced ESP32 module designed for embedded applications requiring both Wi-Fi and Ethernet connectivity. It integrates a dual-core Xtensa 32-bit LX6 MCU, offering robust performance for various networking and control tasks. This module facilitates transparent data transmission between serial ports, Wi-Fi, Ethernet, and Bluetooth-compatible interfaces, making it highly versatile for industrial automation and IoT projects.
Key features include support for multiple TCP/UDP working modes, firmware upgrades via wired or Wi-Fi networks, and an industrial-grade operating temperature range of -40°C to +85°C. Its compact size and stable performance make it suitable for power monitoring and other integrated system requirements.

Product Features

- **Dual-Core Xtensa 32-bit LX6 MCU:** Integrated with SPI flash (3.32Mbit) and SRAM (520KB) for high performance.

- **Flexible Networking Modes:** Supports TCP Server, TCP Client, UDP Server, and UDP Client modes.
- **Transparent Data Transmission:** Seamless data flow between serial port, Wi-Fi, Ethernet, and Bluetooth-compatible interfaces.
- **Firmware Upgrade Capability:** Allows firmware updates over wired network or Wi-Fi.
- **Versatile Connectivity:** Connects to the internet or LAN via router (Wi-Fi) or wired network, enabling TCP/UDP connections to designated servers.
- **Industrial Grade Design:** Stable performance with an operating temperature range of -40°C to +85°C.
- **High Serial Port Baud Rate:** Supports 80-5,000,000 baud rate.
- **Network Protocols:** Compatible with IPv4, TCP/UDP.
- **Software Encryption:** Includes AES/RSA/ECC/SHA for secure communication.

Setup and Pin Description

The WT32-ETH01 module features a well-defined pinout for debugging, programming, and general operation. Understanding these pins is crucial for proper integration and development.

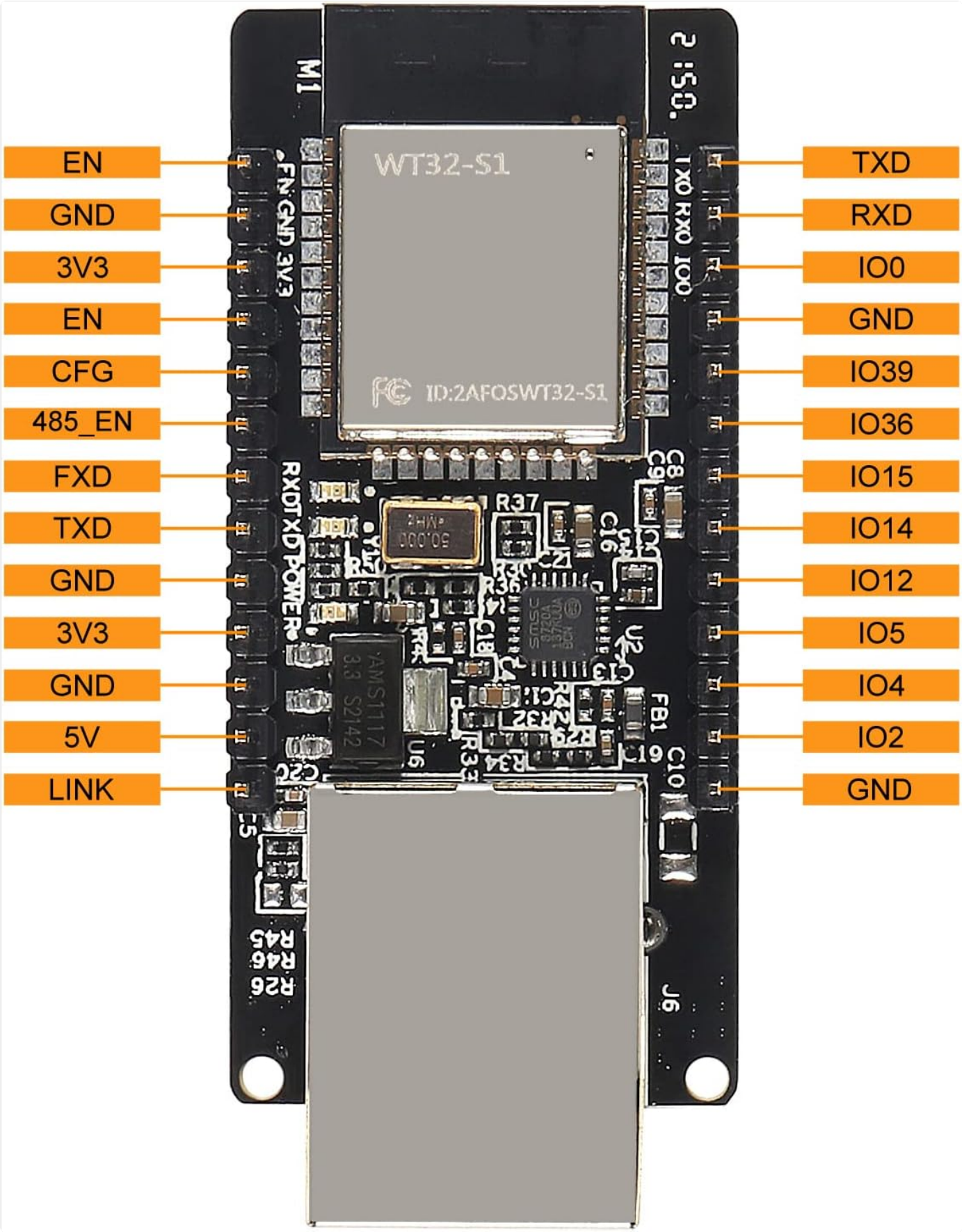


Image: WT32-ETH01 module with detailed pinout labels, showing the arrangement of various pins like EN, GND, 3V3, TXD, RXD, IO pins, and power inputs.

Debugging and Programming Interface Pins

Pin Name	Description

Pin Name	Description
EN1	Reserved debugging and programming interface; enabled, high level is effective.
GND	Reserved debugging and programming interface; Ground.
3V3	Reserved debugging and programming interface; 3.3V power supply.
TXD	Reserved debugging programming interface; IO1, Transmit Data (TXD0).
RXD	Reserved debugging programming interface; IO3, Receive Data (RXD0).
IO0	Reserved for debugging and programming interface; General Purpose Input/Output 0.

Important Notes for Power Supply and I/O:

- The module enables high level by default.
- Only one of 3.3V or 5V power supply should be used at a time. Do not supply both simultaneously.
- IO39 and IO36 pins only support input functionality.

Operating Instructions

Connecting to Network

The WT32-ETH01 supports both wired Ethernet and Wi-Fi connectivity. Ensure proper power supply (3.3V or 5V, not both) is connected before proceeding.

Wired Ethernet Connection:

1. Connect a standard Ethernet cable to the RJ45 port on the WT32-ETH01 module.
2. Connect the other end of the Ethernet cable to a network switch, router, or directly to a computer (if configured for direct connection).
3. Configure the module's network settings (IP address, subnet mask, gateway) via its serial interface or a pre-programmed web interface, if available.

Wi-Fi Connection:

1. Ensure the module is powered on.
2. Access the module's configuration interface (typically via serial port or a temporary Wi-Fi access point it creates).
3. Scan for available Wi-Fi networks and select your desired network (SSID).
4. Enter the Wi-Fi password (PSK) if required.
5. Save the settings. The module will attempt to connect to the Wi-Fi network.

Data Transmission

The module supports transparent data transmission. This means data received on one interface (e.g., serial port) can be automatically forwarded to another (e.g., Ethernet or Wi-Fi) and vice-versa, based on configured rules.

- **Serial to Network:** Data sent to the module's serial port (TXD/RXD) can be encapsulated and sent over TCP/UDP to a remote server via Ethernet or Wi-Fi.

- **Network to Serial:** Data received from a network connection can be de-encapsulated and outputted via the serial port.
- **Bluetooth-compatible:** For Bluetooth communication, refer to the specific SDK and API documentation for the ESP32, as implementation details may vary based on the application.

Maintenance

The WT32-ETH01 module is designed for industrial use and requires minimal maintenance. However, adhering to the following guidelines will ensure its longevity and reliable operation:

- **Environmental Conditions:** Operate the module within its specified industrial temperature range (-40°C to +85°C). Avoid exposure to extreme humidity, dust, or corrosive environments.
- **Power Supply Stability:** Ensure a stable and clean power supply (3.3V or 5V). Fluctuations or incorrect voltage can damage the module.
- **Firmware Updates:** Regularly check for and apply firmware updates provided by the manufacturer or community (if using open-source firmware) to benefit from bug fixes, performance improvements, and new features. Firmware can be updated via wired network or Wi-Fi.
- **Physical Inspection:** Periodically inspect the module for any signs of physical damage, loose connections, or corrosion on the pins.
- **Cleaning:** If necessary, gently clean the module with a soft, dry, anti-static brush or cloth. Do not use liquids or abrasive cleaners.

Troubleshooting

This section provides solutions to common issues encountered with the WT32-ETH01 module.

Common Issues and Solutions:

- **Module Not Powering On:**
  - Verify that the power supply (3.3V or 5V) is correctly connected to the appropriate pins and is providing the correct voltage.
  - Ensure only one power supply (3.3V or 5V) is connected at a time. Connecting both can prevent the module from powering on or cause damage.
  - Check for any short circuits or incorrect wiring.
- **Cannot Connect to Wi-Fi:**
  - Double-check the Wi-Fi SSID and password for accuracy.
  - Ensure the Wi-Fi network is within range and has a strong signal.
  - Verify that the router's settings are not blocking new devices or have MAC address filtering enabled.
  - Try restarting the module and the Wi-Fi router.
- **Ethernet Connection Issues:**

- Ensure the Ethernet cable is securely connected to both the module and the network device.
- Check the network cable for damage. Try a different cable if possible.
- Verify that the network switch/router port is active and functioning.
- Confirm the module's Ethernet configuration (IP address, subnet mask) matches your network setup.

- **Serial Communication Problems:**
  - Ensure the correct baud rate is set on both the module and the communicating device.
  - Verify TXD and RXD connections are correctly crossed (TX to RX, RX to TX).
  - Check that the serial port is not being used by another application.

- **Firmware Update Failure:**
  - Ensure a stable network connection during the update process.
  - Verify the firmware file is correct and not corrupted.
  - Follow the specific flashing instructions for the ESP32, which may involve putting the module into bootloader mode (e.g., holding IO0 low during reset/power-up).

Specifications

Feature	Detail
Model Name	WT32-ETH01
Processor	Dual-core Xtensa 32-bit LX6 MCU
Integrated Flash	3.32Mbit SPI Flash
SRAM	520KB
Wireless Connectivity	2.4GHz Wi-Fi (802.11 b/g/n), Bluetooth dual-mode
Wired Connectivity	Ethernet (RJ45)
Operating Temperature	-40°C to +85°C (-40°F to +185°F)
Serial Port Baud Rate	80 - 5,000,000 bps
Network Protocols	IPv4, TCP/UDP
Software Encryption	AES/RSA/ECC/SHA
Dimensions	Approximately 55mm x 26mm (2.16 x 1.02 inches)
Weight	Approximately 1.13 ounces (32 grams)
Power Supply Options	3.3V or 5V (select one)
Operating System (Typical)	Linux (for development environments), custom firmware

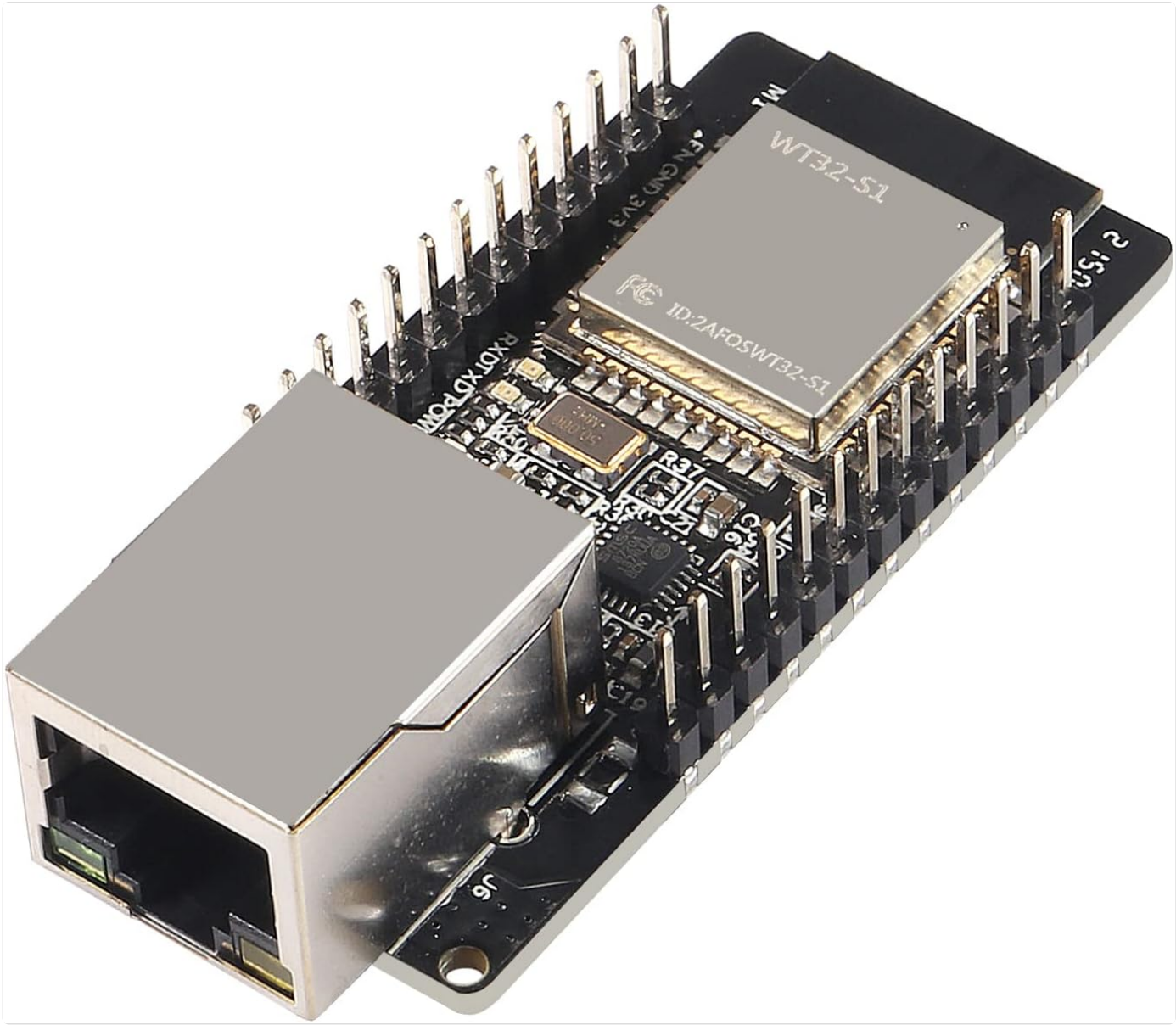


Image: WT32-ETH01 module showing its approximate dimensions of 55mm (length) and 26mm (width).

Warranty and Support

For warranty information and technical support regarding your DWEII WT32-ETH01 module, please refer to the official DWEII website or contact their customer service directly. Keep your purchase receipt as proof of purchase for any warranty claims.

For community support and development resources related to ESP32 modules, consider exploring online forums and documentation provided by Espressif Systems and the broader open-source community.

© 2024 DWEII. All rights reserved.
This manual is for informational purposes only. Specifications are subject to change without notice.

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

Open the live page

https://manuals.plus/asin/B09V4TFNY7

More documents and user manuals: **https://manuals.plus/**