

YOURRYONG NRF51822

YOURRYONG NRF51822 Modular Board User Manual

Models: NRF51822, NRF51822-A1, NRF51822-S1

1. INTRODUCTION

This user manual provides essential information for the proper installation, operation, and maintenance of the YOURRYONG NRF51822 series modular boards. These boards are designed for wireless communication applications, leveraging the NRF51822 chipset for Bluetooth Low Energy (BLE) connectivity. Please read this manual thoroughly before using the product to ensure optimal performance and safety.

2. PRODUCT OVERVIEW

The NRF51822 modular board is a compact, low-power wireless solution based on the Nordic Semiconductor NRF51822 System-on-Chip (SoC). It integrates a 2.4GHz transceiver, an ARM Cortex-M0 CPU, and flash memory, making it suitable for a wide range of applications including IoT devices, wearables, and smart home systems. The module provides a robust platform for developing custom wireless applications.

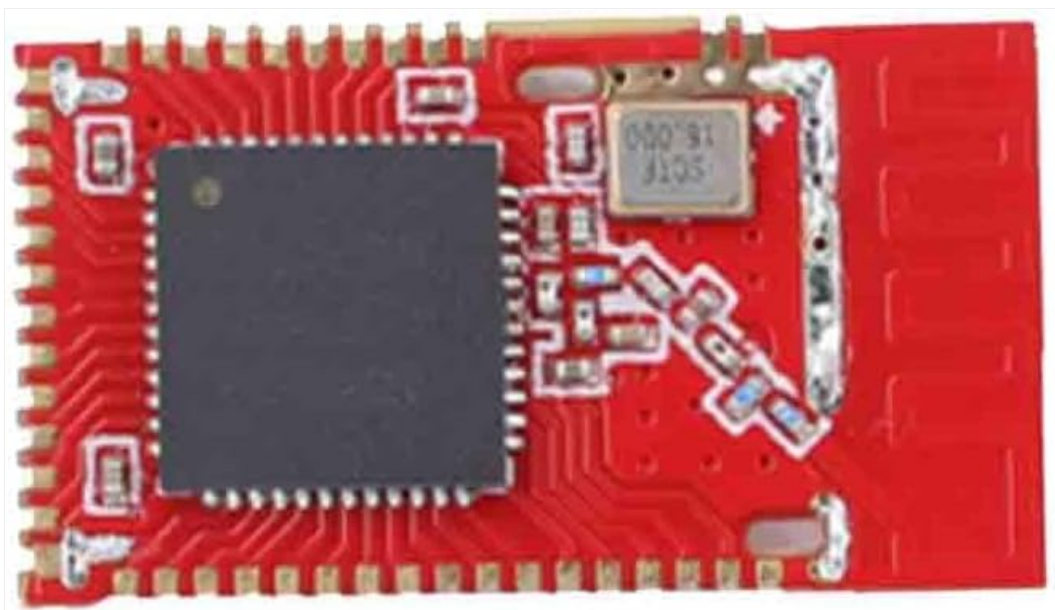


Figure 2.1: Top view of the NRF51822 modular board.



Figure 2.2: Angled view of the NRF51822 modular board.

3. SETUP INSTRUCTIONS

Follow these steps to set up your NRF51822 modular board:

1. **Power Supply:** Connect a stable 1.8V to 3.6V DC power supply to the VCC and GND pins. Ensure the power supply can deliver sufficient current for the module's operation.
2. **Pin Connections:** Identify the necessary GPIO, SPI, I2C, or UART pins for your application. Refer to the NRF51822 datasheet for detailed pinout information.
3. **Antenna:** The module typically includes an integrated antenna. Ensure no metallic objects obstruct the antenna area for optimal wireless performance.
4. **Development Environment:** Install the necessary software development kit (SDK) and tools for NRF51822, such as the Nordic nRF5 SDK and a compatible IDE (e.g., Keil, IAR, Segger Embedded Studio).
5. **Programming:** Connect a compatible programmer/debugger (e.g., J-Link) to the SWD (Serial Wire Debug) pins for flashing firmware onto the module.



Figure 3.1: NRF51822 modular board showing pin headers.

4. OPERATING INSTRUCTIONS

Once the module is set up and programmed with your desired firmware, follow these general operating guidelines:

- **Power On:** Apply power to the module. The module will execute the loaded firmware.
- **BLE Connection:** If configured for BLE, the module will start advertising. Use a compatible BLE scanner application on a smartphone or another BLE device to discover and connect to the module.
- **Data Communication:** Depending on your firmware, you can send and receive data over the BLE connection using defined GATT services and characteristics.
- **GPIO Control:** Utilize the General Purpose Input/Output (GPIO) pins as defined in your firmware for controlling external components or reading sensor data.
- **Firmware Updates:** For future updates, use the SWD interface or Over-The-Air (OTA) DFU (Device Firmware Update) if implemented in your firmware.

5. MAINTENANCE

The NRF51822 modular board is designed for reliable operation with minimal maintenance. Observe the following recommendations:

- **Environmental Conditions:** Operate the module within its specified temperature and humidity ranges. Avoid extreme conditions.
- **Cleaning:** If necessary, gently clean the board with a soft, dry brush or compressed air. Do not use liquids or solvents.
- **Handling:** Handle the board with care, preferably by the edges, to avoid damaging components or introducing electrostatic discharge (ESD).
- **Storage:** Store the module in an anti-static bag in a dry, cool environment when not in use.

6. TROUBLESHOOTING

If you encounter issues with your NRF51822 modular board, consider the following troubleshooting steps:

Problem	Possible Cause	Solution
Module not powering on.	Incorrect power supply voltage or polarity; loose connections.	Verify VCC and GND connections and voltage (1.8V-3.6V). Ensure connections are secure.

Problem	Possible Cause	Solution
Cannot detect BLE advertising.	Firmware not loaded or incorrect; antenna obstruction; module out of range.	Confirm firmware is correctly flashed. Check for obstructions around the antenna. Reduce distance to the scanning device.
Programming errors.	Incorrect SWD connections; driver issues; incompatible programmer.	Double-check SWD pin connections (SWDIO, SWCLK, VCC, GND). Install correct programmer drivers. Ensure programmer is compatible with NRF51822.
Unstable wireless connection.	Interference; poor antenna placement; low power supply.	Minimize interference sources. Ensure antenna is clear. Verify stable power supply.

7. SPECIFICATIONS

Key specifications for the YOURRYONG NRF51822 Modular Board:

- **Brand:** YOURRYONG
- **Model:** NRF51822 (compatible with NRF51822-A1, NRF51822-S1 variants)
- **UPC:** 749771625806
- **ASIN:** B0CQPGTFSY
- **Manufacturer Part Number:** 749771625776
- **Country of Origin:** China
- **Number of Items:** 1
- **Core:** ARM Cortex-M0
- **Wireless Protocol:** Bluetooth Low Energy (BLE) 2.4GHz
- **Operating Voltage:** 1.8V - 3.6V DC (*Typical, refer to NRF51822 datasheet for exact ranges*)
- **Dimensions:** (*Not provided, typical for modular boards*)

8. WARRANTY AND SUPPORT

For warranty information, please refer to the terms and conditions provided by your retailer or the manufacturer at the time of purchase. Technical support may be available through the seller or the YOURRYONG official channels. Please retain your proof of purchase for any warranty claims.

For further assistance, you may contact the seller directly via the platform where the product was purchased.

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

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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