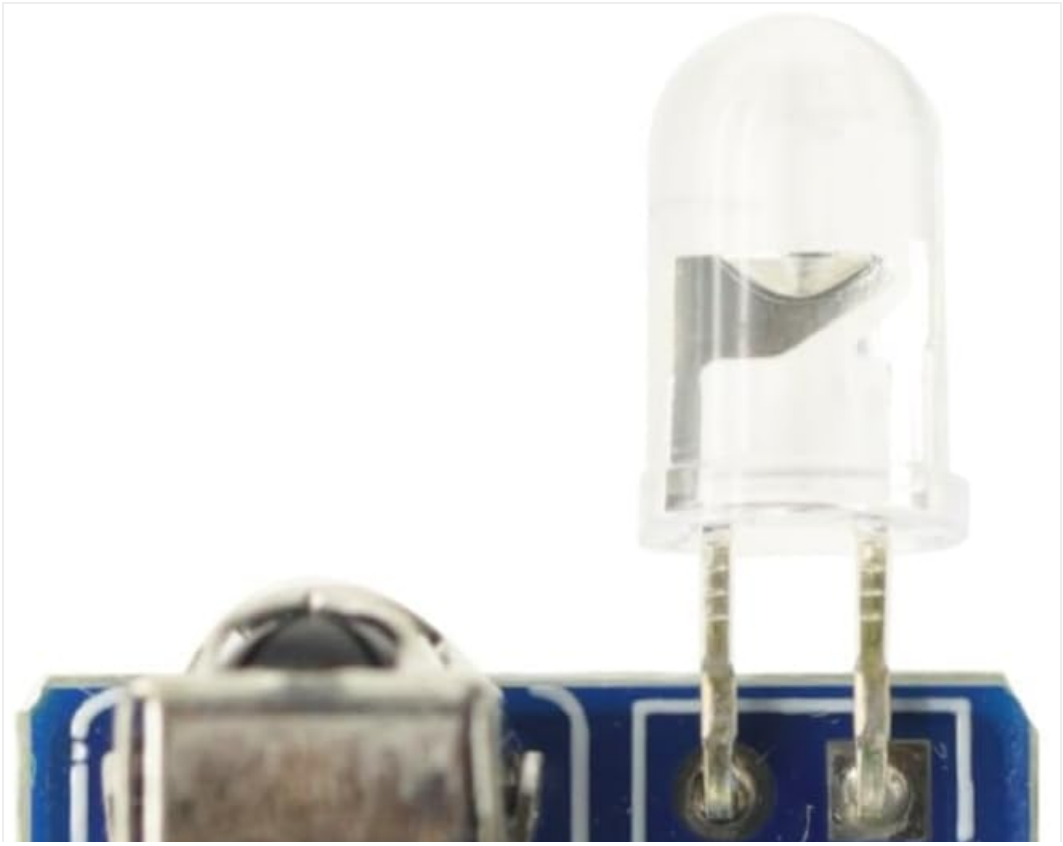
GODIYMODULES IR Remote Decoder/Encoder Module

GODIYMODULES 5V IR Infrared Remote Module User Manual

Model: IR Remote Decoder/Encoder Module

Introduction

This manual provides detailed instructions for the GODIYMODULES 5V IR Infrared Remote Decoder Encoding Transmitter & Receiver Wireless Module. This module is designed for use with microcontrollers like Arduino, enabling infrared remote control capabilities for various electronic projects. It features both infrared emission and reception, along with serial communication for easy integration.



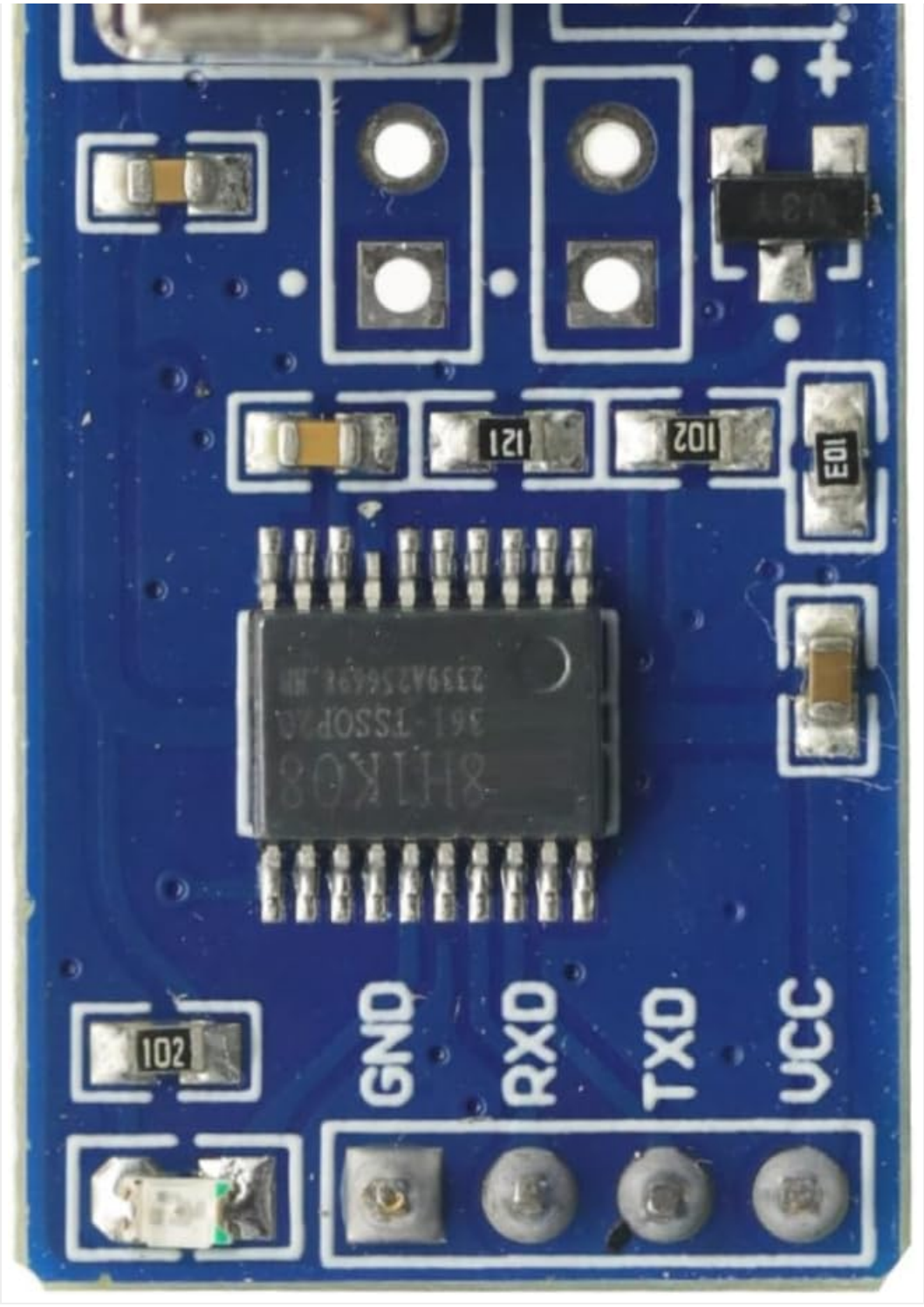


Figure 1: Overview of the GODIYMODULES IR Infrared Remote Module.

Setup and Wiring

The module operates on a 5V supply voltage and communicates via serial (TTL level) interface. Proper wiring is crucial for correct functionality.

Physical Connection Diagram

Figure 2: Wiring diagram showing connections for the IR module.

Wiring Principle

This module utilizes a serial port connection. When connecting to a USB to TTL converter or a microcontroller, ensure that the **TXD** (Transmit Data) pin of the host device (e.g., USB to TTL converter, Arduino) is connected to the **RXD** (Receive Data) pin of the infrared module. Conversely, the **RXD** pin of the host device should connect to the **TXD** pin of the infrared module. The **GND** (Ground) and **VCC** (5V) pins should be connected to the corresponding power supply pins.

- **VCC**: Connect to 5V power supply.
- **GND**: Connect to Ground.
- **TXD** (Module): Connect to RXD (Host device).
- **RXD** (Module): Connect to TXD (Host device).

Important: Do not connect TXD to TXD or RXD to RXD. Always cross-connect these pins.

Operating Instructions

The module communicates using serial commands to decode and transmit infrared signals. This allows for control of infrared household appliances or other devices via a computer serial assistant or supporting

software.

Serial Communication Examples

Commands are typically sent as a sequence of hexadecimal values. Below are examples of common operations:

- **Transmit NEC signal (e.g., code 1C 2F 33, data bit 3):**

  ```
  {A1,F1,1C,2F,33}
  ```

- **Modify the serial communication address to 0xA5:**

  ```
  {A1,F2,A5,00,00}
  ```

- **Modify the baud rate to 4800bps (corresponding to serial number 1):**

  ```
  {A1,F3,01,00,00}
  ```

Refer to the module's specific programming guide or library documentation for a complete list of commands and their syntax.

Maintenance

This infrared module is a low-maintenance electronic component. To ensure its longevity and reliable operation:

- Keep the module clean and free from dust and debris.
- Avoid exposing the module to extreme temperatures or humidity.
- Handle the module with care to prevent physical damage to components or solder joints.
- Ensure stable 5V power supply to prevent damage from voltage fluctuations.

Troubleshooting

- **Module not responding:**
  - Verify all wiring connections, especially TXD/RXD cross-connections and power (5V, GND).
  - Ensure the 5V power supply is stable and correctly connected.
  - Check the serial port settings (baud rate, data bits, parity, stop bits) on your host device to match the module's configuration.
- **Infrared transmission/reception issues:**
  - Ensure there are no obstructions between the module's IR emitter/receiver and the target device.
  - Check the firing distance; the module is rated for 6-10 meters. Performance may vary with environmental conditions.
  - If decoding, ensure the remote control is transmitting a compatible IR protocol (e.g., NEC). Some complex or brand-specific protocols may require advanced decoding.
  - If different remote buttons return the same code, the module might be performing onboard processing rather than providing raw IR data. Consult specific library or module documentation for raw IR capture capabilities.
- **Unexpected behavior:**

- Review your code or serial commands for any errors.
- Ensure the module's firmware is up to date, if applicable.

Specifications

Feature	Specification
Brand	GODIYMODULES
Supply Voltage	5V
Communication	Serial (TTL level)
Firing Distance	6-10 meters (actual environmental testing)
Connectivity Technology	Infrared, Serial
Included Components	1pcs IR Infrared Remote Module
Compatible Operating Systems	Windows, macOS, Linux (for host device communication)
Compatible Devices	Televisions, fans, and other electrical and electronic equipment (via IR control)

Warranty Information

The GODIYMODULES IR Infrared Remote Module is covered by the manufacturer's standard warranty. For specific details regarding warranty terms and conditions, please refer to the documentation provided with your purchase or contact GODIYMODULES directly.

Support

For technical assistance, troubleshooting, or further inquiries regarding the GODIYMODULES 5V IR Infrared Remote Module, please contact the manufacturer, GODIYMODULES, through their official support channels. You may find additional resources, example code, and community forums online by searching for 'GODIYMODULES IR module' or 'Arduino IR serial module'.