NRF24L01+ 2.4GHz RF Transceiver Module

2.4GHz Wireless Transceiver Module



The NRF24L01+ is a low-cost 2.4GHz wireless transceiver module for sending and receiving data between microcontrollers. It is ideal for wireless sensors, robotics, remote controls and Arduino communication projects.

TOP USES

- Wireless sensor networks
- Robot and remote control
- Arduino-to-Arduino communication
- IoT and automation projects

KEY FEATURES

- 2.4GHz wireless communication
- Two-way data transmission
- SPI interface
- Low power consumption
- Multiple communication channels

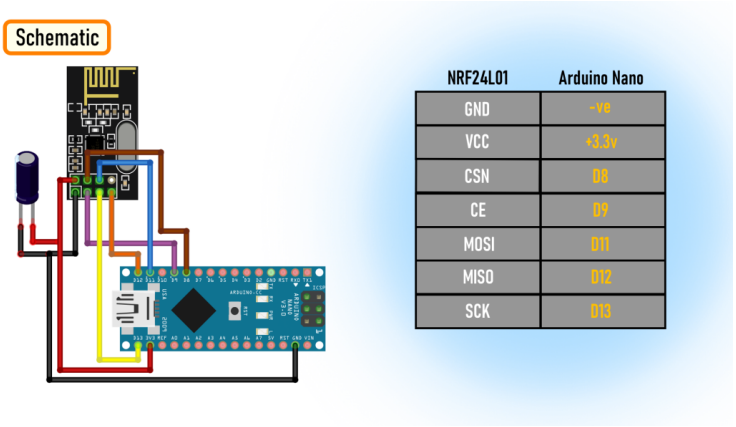
Technical Specifications

NRF24L01+ 2.4GHz RF Transceiver Module

Parameter	Value
Module	NRF24L01+
Frequency	2.4 GHz
Interface	SPI
Supply Voltage	3.3 V
Data Rate	250 Kbps / 1 Mbps / 2 Mbps
Communication	2-way wireless
Channels	Up to 126
Range	Depends on environment and antenna

Pinout

NRF24L01+ 2.4GHz RF Transceiver Module



PIN FUNCTIONS

Pin	Function	Notes
VCC	Arduino 3.3V	Power
GND	Arduino GND	Common ground
CE	D9	Chip enable
CSN	D10	SPI chip select
SCK	D13	SPI clock
MOSI	D11	SPI data to module
MISO	D12	SPI data from module
IRQ	Not required	Optional interrupt

WIRING NOTES

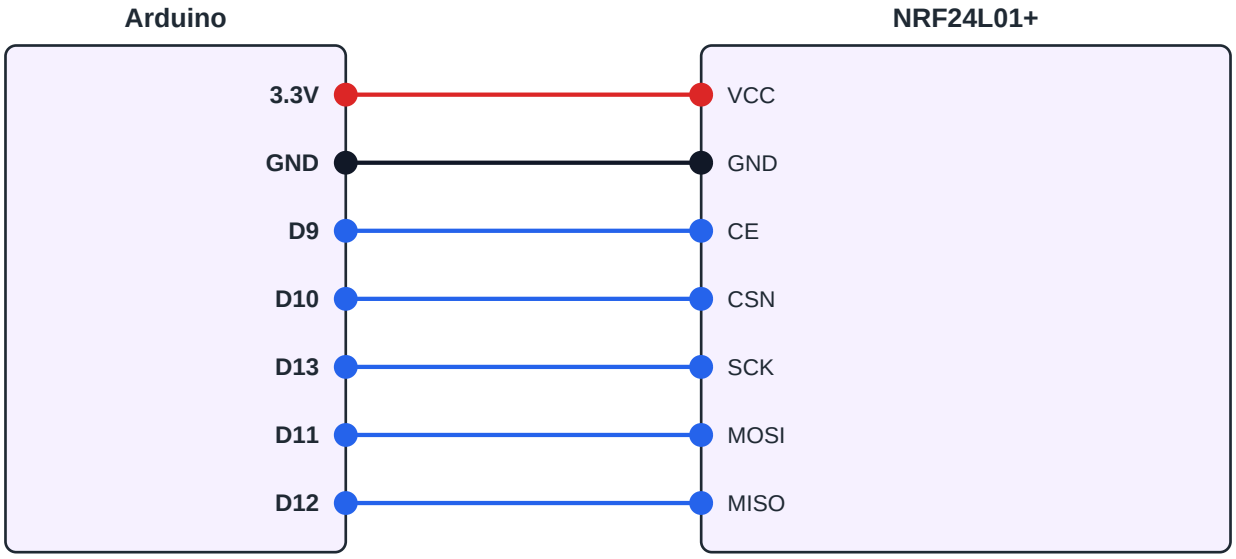
- Power the NRF24L01+ from 3.3V only.
- Do not connect the module VCC to Arduino 5V.
- The module communicates with Arduino through SPI.
- A 10uF capacitor across VCC and GND can improve stability.

Example Project

Wireless Sensor Data Link

Send a sensor value wirelessly from one Arduino to another using two NRF24L01+ modules.

CIRCUIT



EXAMPLE CODE

```
#include <SPI.h>
#include <nRF24L01.h>
#include <RF24.h>

RF24 radio(9, 10);
const byte address[6] = "00001";

void setup() {
  Serial.begin(9600);
  radio.begin();
  radio.openWritingPipe(address);
  radio.stopListening();
}

void loop() {
  int value = analogRead(A0);
  radio.write(&value, sizeof(value));

  Serial.print("Sent: ");
  Serial.println(value);
  delay(500);
}
```

EXPECTED RESULT

- The Arduino reads a value from A0.
- The NRF24L01+ sends the value wirelessly.
- A second NRF24L01+ can receive the transmitted data.

Useful Links

NRF24L01+ 2.4GHz RF Transceiver Module

Resource	Link
RF24 Arduino Library	https://github.com/nRF24/RF24
Arduino IDE	https://www.arduino.cc/en/software
Arduino Language Reference	https://www.arduino.cc/reference/en/

COMPATIBLE COMPONENTS

- Arduino UNO
- Arduino Nano
- Arduino Mega
- Raspberry Pi Pico
- ESP32
- Sensors
- Robotics Projects

Need this component?

Buy NRF24L01+ >>

https://techzoneegypt.com/p/nrf24l01-plus-2-4ghz-rf-transceiver-module