Wemos D1 R1 ESP8266 Board

Wi-Fi Development Board



The Wemos D1 R1 is an ESP8266-based development board with built-in Wi-Fi, Arduino compatibility and a familiar Arduino Uno-style layout. It is ideal for IoT, home automation, sensors and wireless control projects.

TOP USES

- IoT and Wi-Fi projects
- Home automation
- Wireless sensors
- Remote control systems

KEY FEATURES

- ESP8266 Wi-Fi
- Arduino IDE compatible
- Uno-style layout
- USB programming
- Compact development board

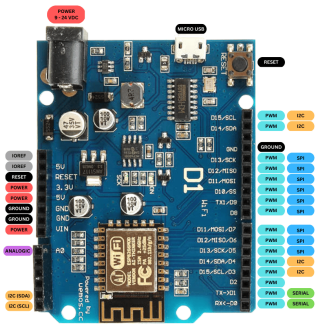
Technical Specifications

Wemos D1 R1 ESP8266 Board

Parameter	Value
Microcontroller	ESP8266EX
CPU	80 MHz
Operating Voltage	3.3 V
Wi-Fi	2.4 GHz 802.11 b/g/n
Flash	4 MB
ADC	10-bit
Communication	UART / SPI / I2C
USB	Micro-USB
Logic	3.3 V

Pinout

Wemos D1 R1 ESP8266 Board



PIN FUNCTIONS

Pin	Function	Notes
D0 - D8	GPIO	Digital input/output
D1 / D2	I2C	SCL / SDA
D5 - D7	SPI	SPI communication
A0	Analog	10-bit ADC
TX / RX	UART	Serial communication
3V3	Power	3.3 V
GND	Ground	Common ground

WIRING NOTES

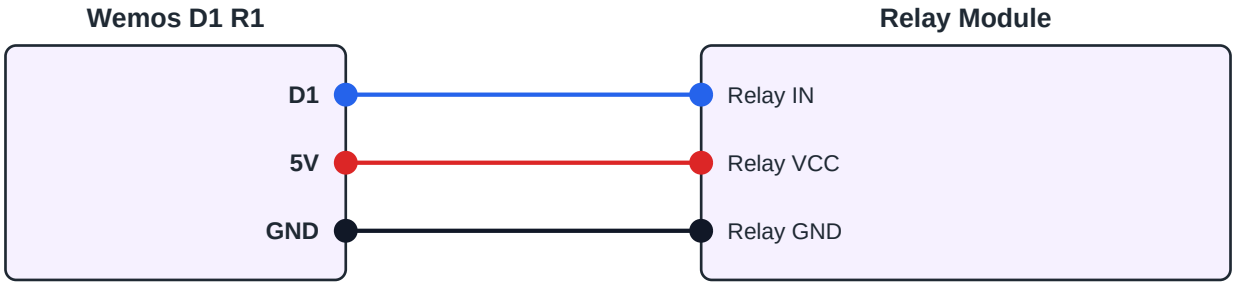
- GPIO uses 3.3 V logic.
- Do not apply 5 V directly to GPIO pins.
- Use external power for motors and servos.

Example Project

Wi-Fi Relay Control

Connect the Wemos D1 R1 to Wi-Fi and control a relay from a web browser.

CIRCUIT



EXAMPLE CODE

```
#include <ESP8266WiFi.h>

const char* ssid = "YOUR_WIFI";
const char* password = "YOUR_PASSWORD";
WiFiServer server(80);
const int relayPin = D1;

void setup() {
  pinMode(relayPin, OUTPUT);
  digitalWrite(relayPin, HIGH);
  WiFi.begin(ssid, password);
  while (WiFi.status() != WL_CONNECTED) delay(500);
  server.begin();
}

void loop() {
  WiFiClient client = server.available();
  if (!client) return;

  if (client.available()) {
    client.read();
    digitalWrite(relayPin, !digitalRead(relayPin));
    client.println("HTTP/1.1 200 OK");
    client.println("Content-Type: text/html");
    client.println();
    client.println("<h1>Wemos D1 R1</h1>");
    client.println("<p>Relay toggled</p>");
  }
  client.stop();
}
```

EXPECTED RESULT

- The Wemos connects to the Wi-Fi network.
- Open its IP address in a browser.
- The relay changes state with each request.

Useful Links

Wemos D1 R1 ESP8266 Board

Resource	Link
ESP8266 Documentation	https://arduino-esp8266.readthedocs.io/
ESP8266 Arduino Core	https://github.com/esp8266/Arduino
Arduino IDE	https://www.arduino.cc/en/software/

COMPATIBLE COMPONENTS

- DHT22
- PIR Sensor
- Relay Module
- OLED Display
- HC-SR04

Need this component?

Buy Wemos D1 R1 ESP8266 >>

https://techzoneegypt.com/p/wemos-d1-r1-esp8266-board