

Introducción

El **ESP8266 NodeMCU** es una plataforma de hardware y software open source que permite a los usuarios crear dispositivos conectados a Internet con funciones de red WiFi de forma rápida y fácil.

Se basa en el chip ESP8266, que es un microcontrolador Wi-Fi de bajo costo y de altas prestaciones.

Aplicaciones principales

- Dispositivos domésticos inteligentes
- Dispositivos IoT
- Wearables
- Juguetes conectados
- Sistemas de seguridad
- Termostatos
- Sistemas de rociadores
- Controles remotos
- Iluminación automatizada

Código fuente

```
/*
 * ESP8266 NodeMCU LED Control over WiFi Demo
 *
 * https://circuits4you.com
 */
#include <ESP8266WiFi.h>
#include <WiFiClient.h>

//ESP Web Server Library to host a web page
#include <ESP8266WebServer.h>

//-----
//Our HTML webpage contents in program memory
const char MAIN_page[] PROGMEM = R"====(
<!DOCTYPE html>
<html>
<body>
<center>
<h1>WiFi LED on off demo: 1</h1><br>
Ciclck to turn <a href="ledOn">LED ON</a><br>
Ciclck to turn <a href="ledOff">LED OFF</a><br>
<hr>
<a href="https://circuits4you.com">circuits4you.com</a>
</center>
```

```

</body>
</html>
)====";
//-----
//On board LED Connected to GPIO2
#define LED 2

//SSID and Password of your WiFi router
const char* ssid = "BONDIATOTLODIA";
const char* password = "UHYD6VRg";

//Declare a global object variable from the ESP8266WebServer class.
ESP8266WebServer server(80); //Server on port 80

//=====
// This routine is executed when you open its IP in browser
//=====
void handleRoot() {
  Serial.println("You called root page");
  String s = MAIN_page; //Read HTML contents
  server.send(200, "text/html", s); //Send web page
}

void handleLEDOn() {
  Serial.println("LED on page");
  digitalWrite(LED,LOW); //LED is connected in reverse
  server.send(200, "text/html", "LED is ON"); //Send ADC value only to client ajax
  request
}

void handleLEDOff() {
  Serial.println("LED off page");
  digitalWrite(LED,HIGH); //LED off
  server.send(200, "text/html", "LED is OFF"); //Send ADC value only to client ajax
  request
}

//=====
//                      SETUP
//=====
void setup(void){
  Serial.begin(115200);

  Serial.println("");
  Serial.println(ssid);
  Serial.println(password);

  WiFi.begin(ssid, password);    //Connect to your WiFi router

  //Onboard LED port Direction output
  pinMode(LED,OUTPUT);
  //Power on LED state off
  digitalWrite(LED,HIGH);

```

```
// Wait for connection
while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
}

//If connection successful show IP address in serial monitor
Serial.println("");
Serial.print("Connected to ");
Serial.println(ssid);
Serial.print("IP address: ");
Serial.println(WiFi.localIP()); //IP address assigned to your ESP

server.on("/", handleRoot); //Which routine to handle at root location.
This is display page
server.on("/ledOn", handleLEDon); //as Per <a href="ledOn">, Subroutine to be
called
server.on("/ledOff", handleLEDOff);

server.begin(); //Start server
Serial.println("HTTP server started");
}
//=====
//                      LOOP
//=====
void loop(void){
    server.handleClient(); //Handle client requests
}
```

Subida

Subido

```
Crystal is 26MHz
MAC: bc:ff:4d:cf:c3:57
Uploading stub...
Running stub...
Stub running...
Configuring flash size...
Auto-detected Flash size: 4MB
Flash params set to 0x0340
Compressed 303776 bytes to 220420...
Writing at 0x00000000... (7 %)
Writing at 0x00004000... (14 %)
Writing at 0x00008000... (21 %)
Writing at 0x0000c000... (28 %)
Writing at 0x00010000... (35 %)
Writing at 0x00014000... (42 %)
Writing at 0x00018000... (50 %)
Writing at 0x0001c000... (57 %)
Writing at 0x00020000... (64 %)
Writing at 0x00024000... (71 %)
Writing at 0x00028000... (78 %)
Writing at 0x0002c000... (85 %)
Writing at 0x00030000... (92 %)
Writing at 0x00034000... (100 %)
Wrote 303776 bytes (220420 compressed) at 0x00000000 in 19.5 seconds (effective 124.8 kbit/s)...
Hash of data verified.

Leaving...
Hard resetting via RTS pin...
```

Salida monitor serie



```
.....
Connected to Xiaomi_AF39
IP address: 192.168.31.134
HTTP server started
.....
Connected to BONDIATOTLODIA
IP address: 192.168.1.58
HTTP server started
You called root page
LED on page
LED off page
LED on page
LED off page
```

Wifi bridge

```
#include <ESP8266WiFi.h>

// Set WiFi credentials
#define WIFI_SSID "YOUR WIFI NETWORK SSID"
```

```
#define WIFI_PASS "YOUR WIFI PASSWORD"

// Set AP credentials
#define AP_SSID "ESP8266"
#define AP_PASS "magicword"

void setup()
{
    // Setup serial port
    Serial.begin(115200);
    Serial.println();

    // Begin Access Point
    WiFi.mode(WIFI_AP_STA);
    WiFi.softAP(AP_SSID, AP_PASS);

    // Begin WiFi
    WiFi.begin(WIFI_SSID, WIFI_PASS);

    // Connecting to WiFi...
    Serial.print("Connecting to ");
    Serial.print(WIFI_SSID);
    while (WiFi.status() != WL_CONNECTED)
    {
        delay(100);
        Serial.print(".");
    }

    // Connected to WiFi
    Serial.println();
    Serial.println("Connected!");
    Serial.print("IP address for network ");
    Serial.print(WIFI_SSID);
    Serial.print(" : ");
    Serial.println(WiFi.localIP());
    Serial.print("IP address for network ");
    Serial.print(AP_SSID);
    Serial.print(" : ");
    Serial.print(WiFi.softAPIP());

}

void loop() {
    // put your main code here, to run repeatedly:

}
```

<https://siytek.com/esp8266-ap-and-station-mode/>