

Examples > WiFi Library

Connect With WEP

This example shows you how to connect to a WEP encrypted 802.11b/g network with the Arduino WiFi shield. Your Arduino's serial monitor will provide information about the connection once it has connected.

Hardware Required

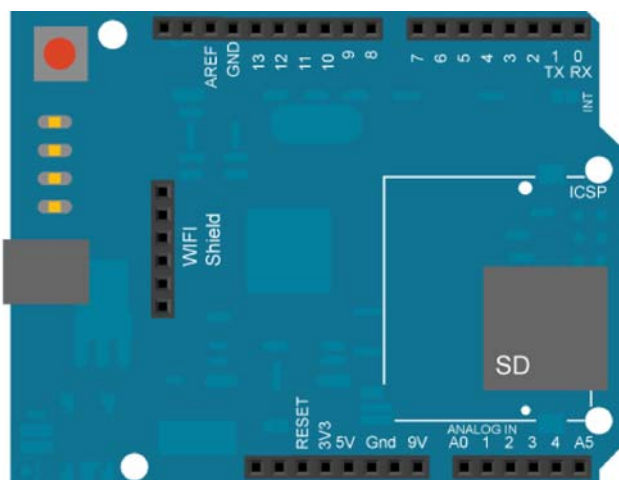
- Arduino WiFi Shield
- Shield-compatible Arduino board

Circuit

The WiFi shield uses pins 10, 11, 12, and 13 for the SPI connection to the HDG104 module. Digital pin 4 is used to control the slave select pin on the SD card.

You should have access to a 802.11b/g wireless network that connects to the internet for this example. You will need to change the network settings in the sketch to correspond to your particular networks SSID.

WEP network passwords are hexadecimal strings known as keys. A WEP network can have 4 different keys; each key is assigned a "Key Index" value. For WEP encrypted networks, you need the SSID, the key, and key number.



(//www.arduino.cc/en/uploads/Tutorial/WiFiShield_bb.png)

image developed using Fritzing (<http://www.fritzing.org>). For more circuit examples, see the Fritzing project page (<http://fritzing.org/projects/>)

In the above image, the Arduino would be stacked below the WiFi shield.

Code:

```
/*
```

```
This example connects to a WEP-encrypted Wifi network.
```

*Then it prints the MAC address of the Wifi shield,
the IP address obtained, and other network details.*

*If you use 40-bit WEP, you need a key that is 10 characters long,
and the characters must be hexadecimal (0-9 or A-F).
e.g. for 40-bit, ABBADEAF01 will work, but ABBADEAF won't work
(too short) and ABBAISDEAF won't work (I and S are not
hexadecimal characters).*

*For 128-bit, you need a string that is 26 characters long.
D0D0DEADF00DABBADEAFBEADED will work because it's 26 characters,
all in the 0-9, A-F range.*

Circuit:

** WiFi shield attached*

created 13 July 2010

by dlf (Metodo2 srl)

modified 31 May 2012

by Tom Igoe

**/*

#include <WiFi.h>

```
char ssid[] = "yourNetwork";           // your network SSID (name)
char key[] = "D0D0DEADF00DABBADEAFBEADED"; // your network key
int keyIndex = 0;                       // your network key Index number
int status = WL_IDLE_STATUS;           // the Wifi radio's status
```

```
void setup() {
  //Initialize serial and wait for port to open:
  Serial.begin(9600);
  while (!Serial) {
    ; // wait for serial port to connect. Needed for Leonardo only
  }

  // check for the presence of the shield:
  if (WiFi.status() == WL_NO_SHIELD) {
    Serial.println("WiFi shield not present");
    // don't continue:
    while(true);
  }

  // attempt to connect to Wifi network:
  while ( status != WL_CONNECTED) {
    Serial.print("Attempting to connect to WEP network, SSID: ");
    Serial.println(ssid);
    status = WiFi.begin(ssid, keyIndex, key);

    // wait 10 seconds for connection:
    delay(10000);
  }

  // once you are connected :
  Serial.print("You're connected to the network");
  printCurrentNet();
  printWifiData();
}
```

```
void loop() {
  // check the network connection once every 10 seconds:
  delay(10000);
  printCurrentNet();
}
```

```
void printWifiData() {
  // print your Wifi shield's IP address:
  IPAddress ip = WiFi.localIP();
  Serial.print("IP Address: ");
  Serial.println(ip);
  Serial.println(ip);

  // print your MAC address:
  byte mac[6];
  WiFi.macAddress(mac);
  Serial.print("MAC address: ");
  Serial.print(mac[5],HEX);
```

```

Serial.print(":");
Serial.print(mac[4],HEX);
Serial.print(":");
Serial.print(mac[3],HEX);
Serial.print(":");
Serial.print(mac[2],HEX);
Serial.print(":");
Serial.print(mac[1],HEX);
Serial.print(":");
Serial.println(mac[0],HEX);
}

void printCurrentNet() {
  // print the SSID of the network you're attached to:
  Serial.print("SSID: ");
  Serial.println(WiFi.SSID());

  // print the MAC address of the router you're attached to:
  byte bssid[6];
  WiFi.BSSID(bssid);
  Serial.print("BSSID: ");
  Serial.print(bssid[5],HEX);
  Serial.print(":");
  Serial.print(bssid[4],HEX);
  Serial.print(":");
  Serial.print(bssid[3],HEX);
  Serial.print(":");
  Serial.print(bssid[2],HEX);
  Serial.print(":");
  Serial.print(bssid[1],HEX);
  Serial.print(":");
  Serial.println(bssid[0],HEX);

  // print the received signal strength:
  long rssi = WiFi.RSSI();
  Serial.print("signal strength (RSSI):");
  Serial.println(rssi);

  // print the encryption type:
  byte encryption = WiFi.encryptionType();
  Serial.print("Encryption Type:");
  Serial.println(encryption,HEX);
  Serial.println();
}

```

[Get Code] (<http://www.arduino.cc/en/Tutorial/ConnectWithWEP?action=sourceblock&num=1>)

See Also:

- [ConnectNoEncryption](http://www.arduino.cc/en/Tutorial/ConnectNoEncryption) (<http://www.arduino.cc/en/Tutorial/ConnectNoEncryption>) : Demonstrates how to connect to an open network
- [ConnectWithWEP](http://www.arduino.cc/en/Tutorial/ConnectWithWEP) (<http://www.arduino.cc/en/Tutorial/ConnectWithWEP>) : Demonstrates how to connect to a network that is encrypted with WEP
- [ConnectWithWPA](http://www.arduino.cc/en/Tutorial/ConnectWithWPA) (<http://www.arduino.cc/en/Tutorial/ConnectWithWPA>) : Demonstrates how to connect to a network that is encrypted with WPA2 Personal
- [ScanNetworks](http://www.arduino.cc/en/Tutorial/ScanNetworks) (<http://www.arduino.cc/en/Tutorial/ScanNetworks>) : Displays all WiFi networks in range
- [WiFiChatServer](http://www.arduino.cc/en/Tutorial/WiFiChatServer) (<http://www.arduino.cc/en/Tutorial/WiFiChatServer>) : Set up a simple chat server
- [WiFiWebClient](http://www.arduino.cc/en/Tutorial/WiFiWebClient) (<http://www.arduino.cc/en/Tutorial/WiFiWebClient>) : Connect to a remote webserver
- [WiFiWebClientRepeating](http://www.arduino.cc/en/Tutorial/WiFiWebClientRepeating) (<http://www.arduino.cc/en/Tutorial/WiFiWebClientRepeating>): Repeatedly make HTTP calls to a server
- [WiFiWebServer](http://www.arduino.cc/en/Tutorial/WiFiWebServer) (<http://www.arduino.cc/en/Tutorial/WiFiWebServer>) : Serve a webpage from the WiFi shield

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