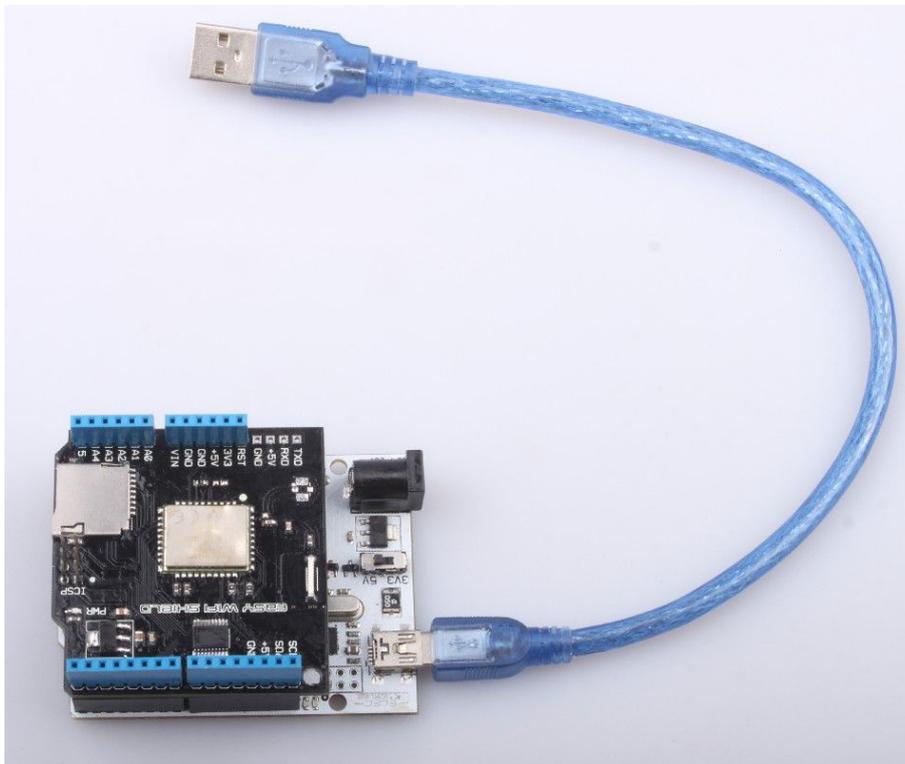


## Easy Wifi Shield User Guide

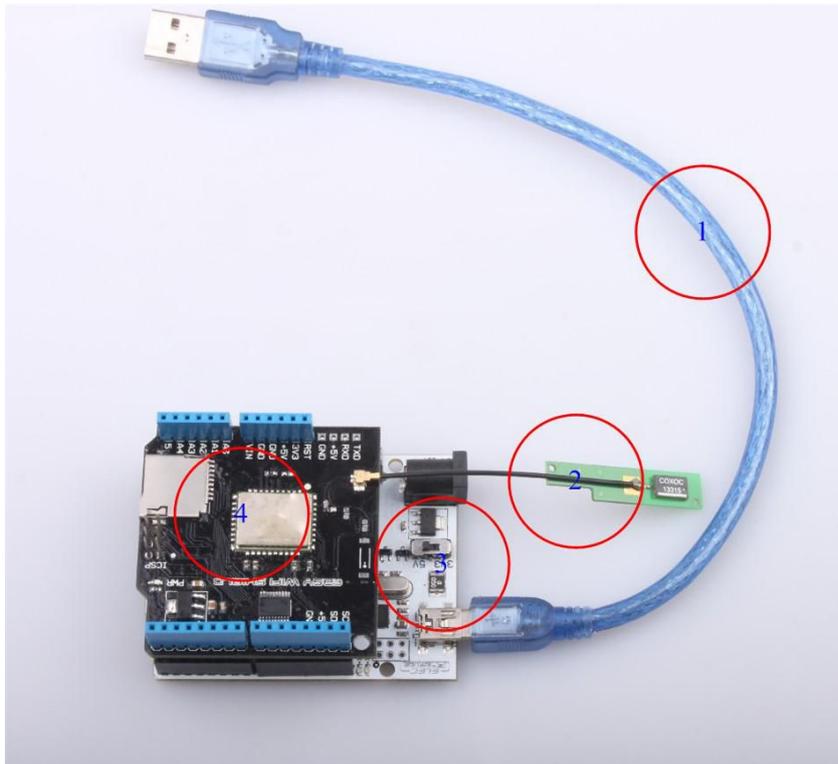
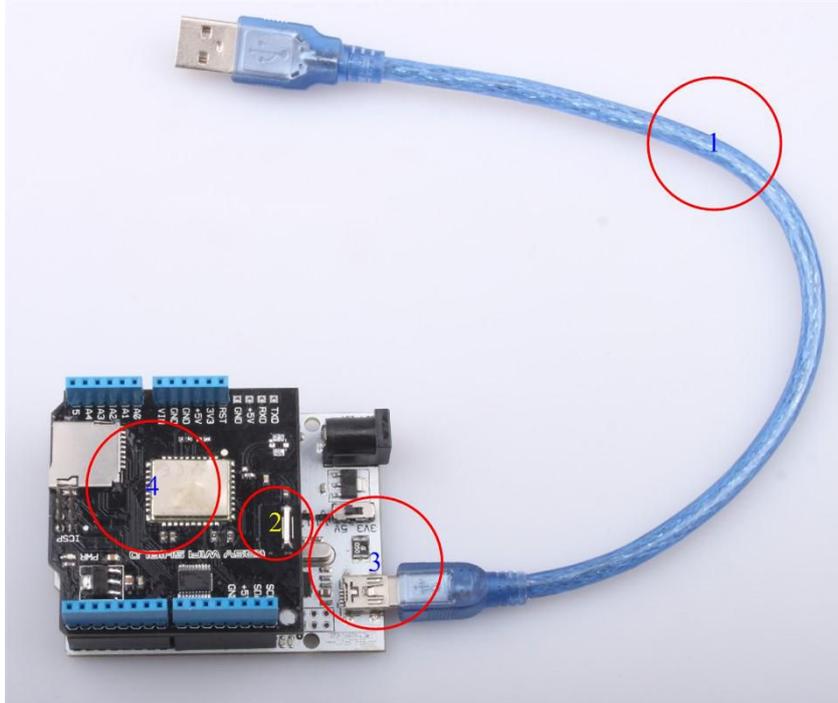
### Easy Wifi Shield Description

Easy Wifi Shield is an Expansion Board based on CC3000 wireless module, cheap, powerful. Easy Wifi Shield adopted SPI communication mode (Our Shield only use ICSP2X3 SPI), onboard 3.3V regulator circuit (TI-CC3000 operating voltage of 3.3V), plus one Micro SD card. Further more, the CC3000 module in the shield has two antennas access to circuit, a URL connector which can be connected to external 2.4GHZ antenna, and the other ceramic antenna is directly attached to the plate. Easy Wifi Shield can be used in smart home, remote control and so on.



## Hardware and software preparation

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**Hardware:**

- 1、 USB Cable
- 2、 2.4GHZ Wifi Ceramic Antenna
- 3、 Arduino mainboard
- 4、 Easy Wifi Shield

**Software:**

- 1、 Elecfreaks\_CC3000\_Library
- 2、 Arduino IDE

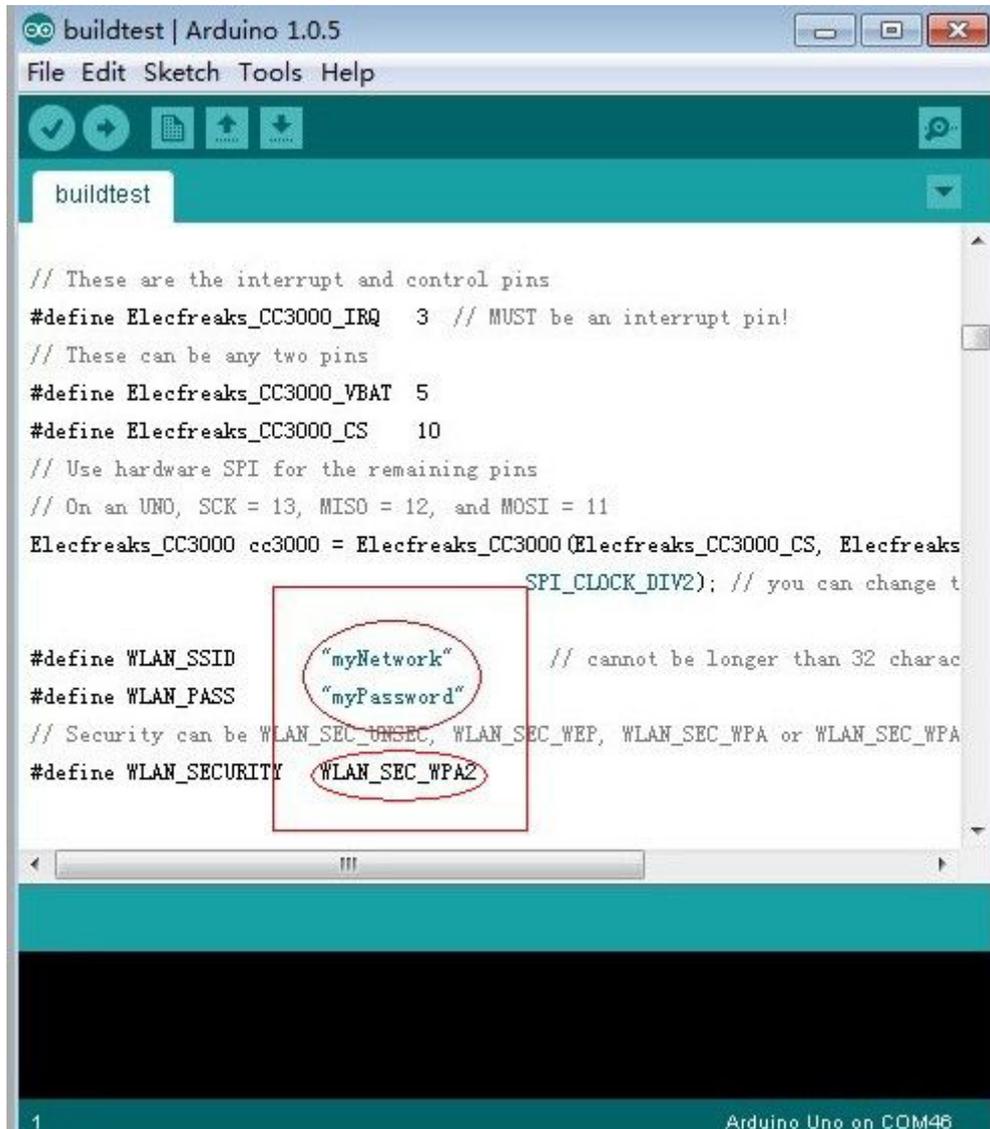
## Part 1 Download the Elecfreaks CC3000 Library to Arduino

### IDE

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1. From our official website download the file of Elecfreaks\_CC3000\_Library
2. Place file of Elecfreaks\_CC3000\_Library into the folder of Arduino (1.0.5) IDE Libraries。
3. Follow the below steps download the Elecfreaks\_CC3000\_Library。 Open Arduino ( 1.0.5 ) IDE ->File ->Exmaple ->Elecfreaks\_CC3000\_Library->buidtest/ntpTest/Webcient.....(We offer a variety of basic test methods for CC3000\_Module, here not listed one by one, and we only introduce the first“buidtest”)
4. After completing the above steps, we have to modify some of the content of the test code inside.

When you choose the Elecfreaks\_CC3000\_Library->buidtest in step3, the IDE would jump out a programming screen as below.

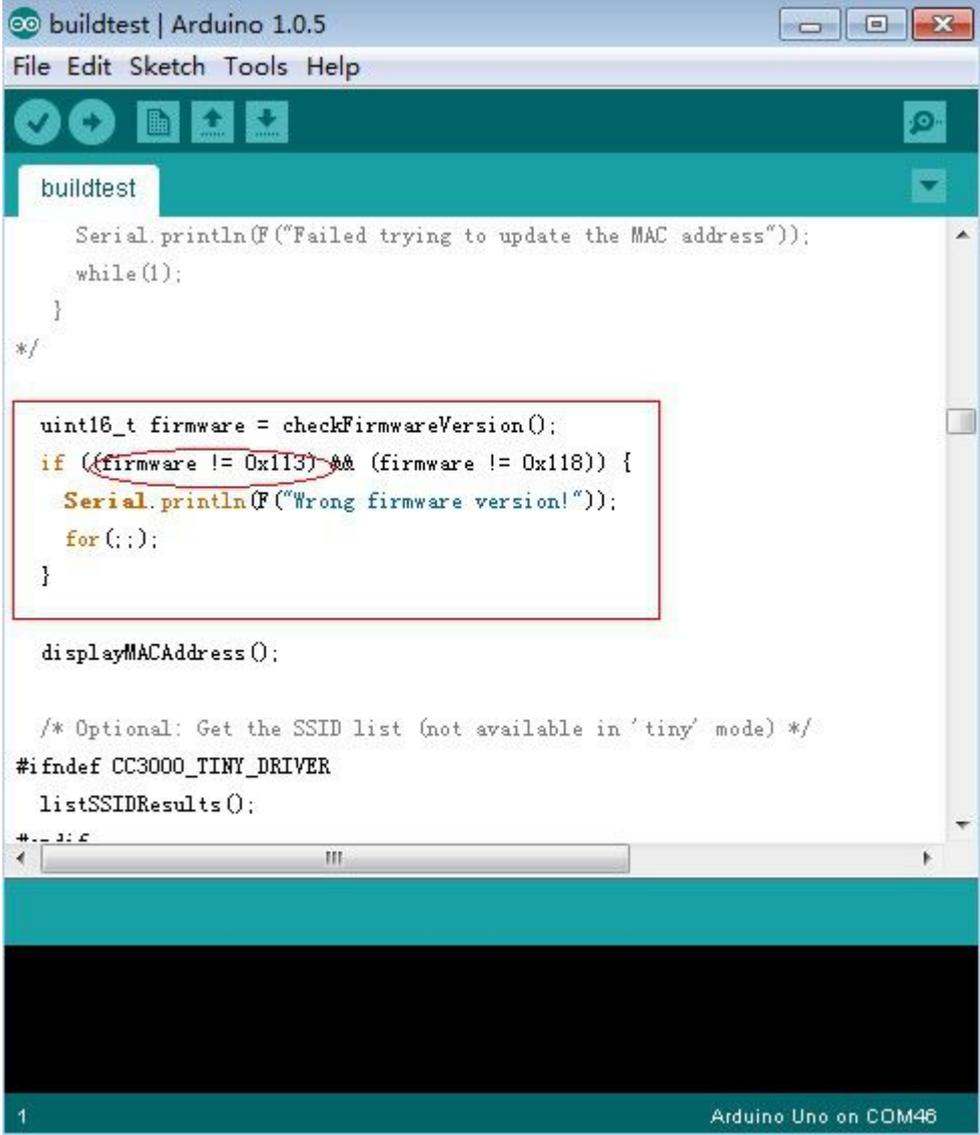


```
// These are the interrupt and control pins
#define Electfreaks_CC3000_IRQ 3 // MUST be an interrupt pin!
// These can be any two pins
#define Electfreaks_CC3000_VBAT 5
#define Electfreaks_CC3000_CS 10
// Use hardware SPI for the remaining pins
// On an UNO, SCK = 13, MISO = 12, and MOSI = 11
Electfreaks_CC3000 cc3000 = Electfreaks_CC3000(Electfreaks_CC3000_CS, Electfreaks
SPI_CLOCK_DIV2); // you can change t

#define WLAN_SSID "myNetwork" // cannot be longer than 32 charac
#define WLAN_PASS "myPassword"
// Security can be WLAN_SEC_UNSEC, WLAN_SEC_WEP, WLAN_SEC_WPA or WLAN_SEC_WPA
#define WLAN_SECURITY WLAN_SEC_WPA2
```

**Note:**

1. Modify the content in the red circle like the above diagram, and change the "myNetwork"&"myPassword" into the wireless network and the corresponding password you are using. Also set up your network nature "WLAN\_SEC\_WPA2"



```
buildtest | Arduino 1.0.5
File Edit Sketch Tools Help

Serial.println(F("Failed trying to update the MAC address"));
while(1);
}
*/

uint16_t firmware = checkFirmwareVersion();
if ((firmware != 0x113) && (firmware != 0x118)) {
  Serial.println(F("Wrong firmware version!"));
  for(;;);
}

displayMACAddress();

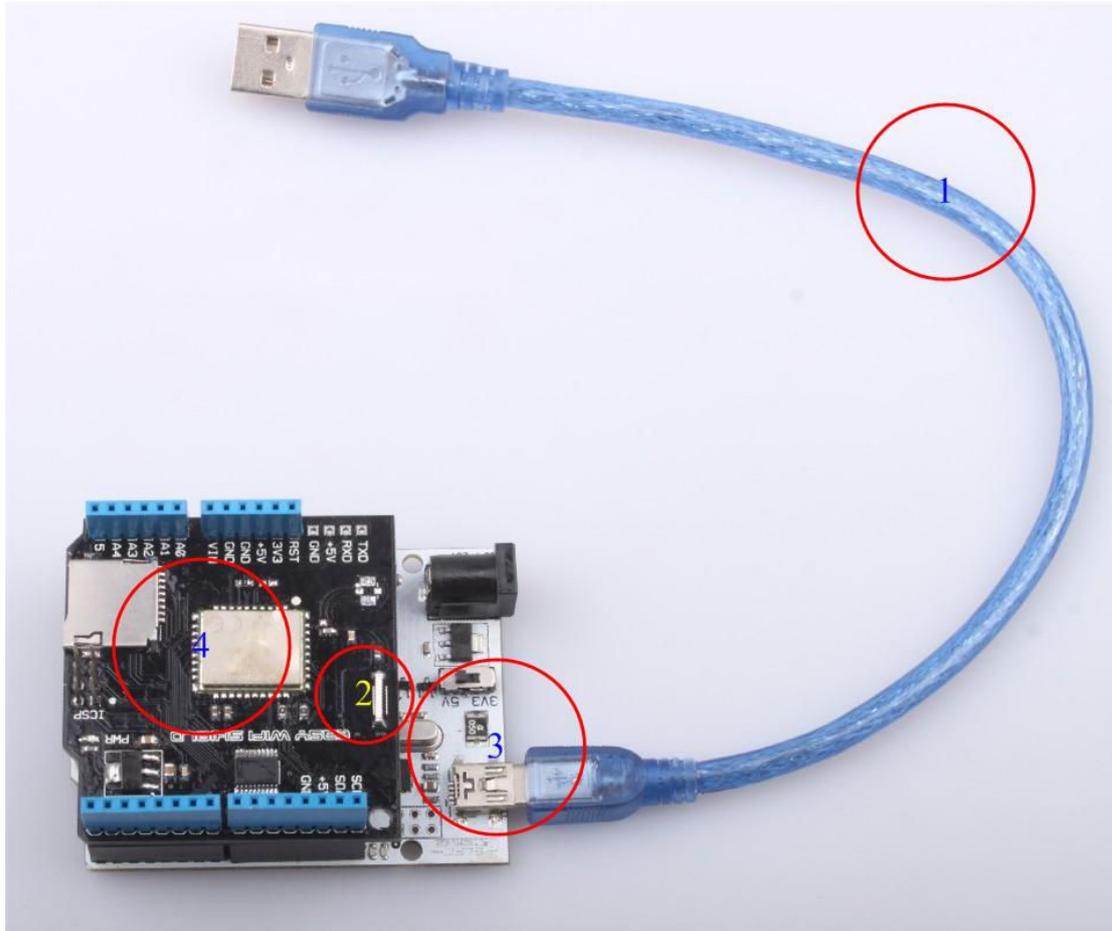
/* Optional: Get the SSID list (not available in 'tiny' mode) */
#ifndef CC3000_TINY_DRIVER
  listSSIDResults();
#endif

1 Arduino Uno on COM46
```

2. If “Wrong firmware version” occurred in the test, you have to modify your firmware version number, like demonstrated in the above diagram. For example, after test, we found out the firmware version number for the CC3000 Module is V1.10, but as 1.10 hexadecimal number is "0X10A", rather than "0X113", So error would occur when we detect firmware version. Therefore, you need to modify your version number ("0X113" to "0X10A").

## Part2 MFRC522 Module and Arduino UNO Connecting way

### Step 1. Connecting diagram



CC3000 Module and Arduino UNO connecting chart

CC3000 Module	Arduino UNO
GND	GND
+5V	+5V
IRQ	D3
EN	D5
CS	D10
DI	ICSP-MOSI
DO	ICSP-MISO
CK	ICSP-SCK
SS	D4



The image shows two windows from the Arduino IDE. The left window, titled 'buildtest | Arduino 1.0.5', displays a C++ sketch for an Arduino Uno. The sketch includes headers for the CC3000 module and configures pins for SPI and WLAN. It defines WLAN credentials for a network named 'dlink' and includes a setup function that prints 'Hello, CC3000!' to the serial monitor. The right window, titled 'COM46', shows the serial output of the sketch. It displays system information (RX/TX buffers, free RAM), initialization of the CC3000 module (firmware 1.10, MAC address 0x08 0x00 0x28 0x57 0x39 0x04), and a scan for available networks. Three networks are found: 'ChinaNet-Sufe', 'Hu's Home', and 'dlink'. The sketch successfully connects to the 'dlink' network, obtains an IP address (192.168.0.118), and performs a ping test to www.electfreaks.com, which returns 5 replies.

```
buildtest | Arduino 1.0.5
File Edit Sketch Tools Help

buildtest $

*/

#include <ElecFreaks_CC3000.h>
#include <ccspi.h>
#include <SPI.h>
#include <string.h>
#include "utility/debug.h"

// These are the interrupt and control pins
#define ElecFreaks_CC3000_IRQ 3 // MUST be an interrupt pin!
// These can be any two pins
#define ElecFreaks_CC3000_VBAT 5
#define ElecFreaks_CC3000_CS 10
// Use hardware SPI for the remaining pins
// On an UNO, SCK = 13, MISO = 12, and MOSI = 11
ElecFreaks_CC3000 cc3000 = ElecFreaks_CC3000(ElecFreaks_CC3000_CS, ElecFreaks
SPI_CLOCK_DIV2); // you can change t

#define WLAN_SSID "dlink" // cannot be longer than 32 characters
#define WLAN_PASS "electfreaks"
// Security can be WLAN_SEC_UNSEC, WLAN_SEC_WEP, WLAN_SEC_WPA or WLAN_SEC_WPA2
#define WLAN_SECURITY WLAN_SEC_WPA2

/*****
/*
@brief Sets up the HW and the CC3000 module (called automatically
on startup)
*/
/*****
void setup(void)
{
  Serial.begin(115200);
  Serial.println(F("Hello, CC3000!\n"));
}

Done uploading.

Binary sketch size: 18,756 bytes (of a 32,256 byte maximum)

85 Arduino Uno on COM46

COM46

Send

RX Buffer : 131 bytes
TX Buffer : 131 bytes
Free RAM: 1239

Initialising the CC3000 ...
Firmware V. : 1.10
MAC Address : 0x08 0x00 0x28 0x57 0x39 0x04
Started AP/SSID scan

Networks found: 3
=====
SSID Name : ChinaNet-Sufe
RSSI : 62
Security Mode: 3

SSID Name : Hu's Home
RSSI : 34
Security Mode: 3

SSID Name : dlink
RSSI : 67
Security Mode: 3
=====

Deleting old connection profiles

Attempting to connect to dlink
Started AP/SSID scan

Connecting to dlink..Waiting to connect...Connected!
Request DHCP

IP Addr: 192.168.0.118
Netmask: 255.255.255.0
Gateway: 192.168.0.254
DHCPsrv: 192.168.0.254
DNSSrv: 192.168.0.254
www.electfreaks.com -> 173.254.10.191
Pinging 173.254.10.191...5 replies
Ping successful!

Closing the connection

Autoscroll No line ending 115200 baud
```

