CC3000 WIFI shield

Technical Manual Rev 1r0

"Upgraded to Firmware V 1.24"

The e-gizmo CC3000 WIFI Shield based on popular TI CC3000 Wifi Module with on board microSD socket, board chip ceramic antenna. Option for SMA RF connector and compatible in gizDuino/Arduino Shield.

FEATURES:

- On-board MicroSD socket.
- On-board chip ceramic antenna.
- Option for SMA RF connector.
- Compatible in gizDuino/Arduino shield.

*Upgraded to Firmware version 1.24
for fastest connection in web browsers.

GENERAL SPECIFICATION:

Module device : CC3000

Firmware version : V 1.24

Supply input: +5V DC

Default Serial Baud Rate:
• 115,200

Power Input:
• Powered via gizDuino
(Arduino Clone) +5V DC

PCB Dimension:
• 54 mm x 53 mm

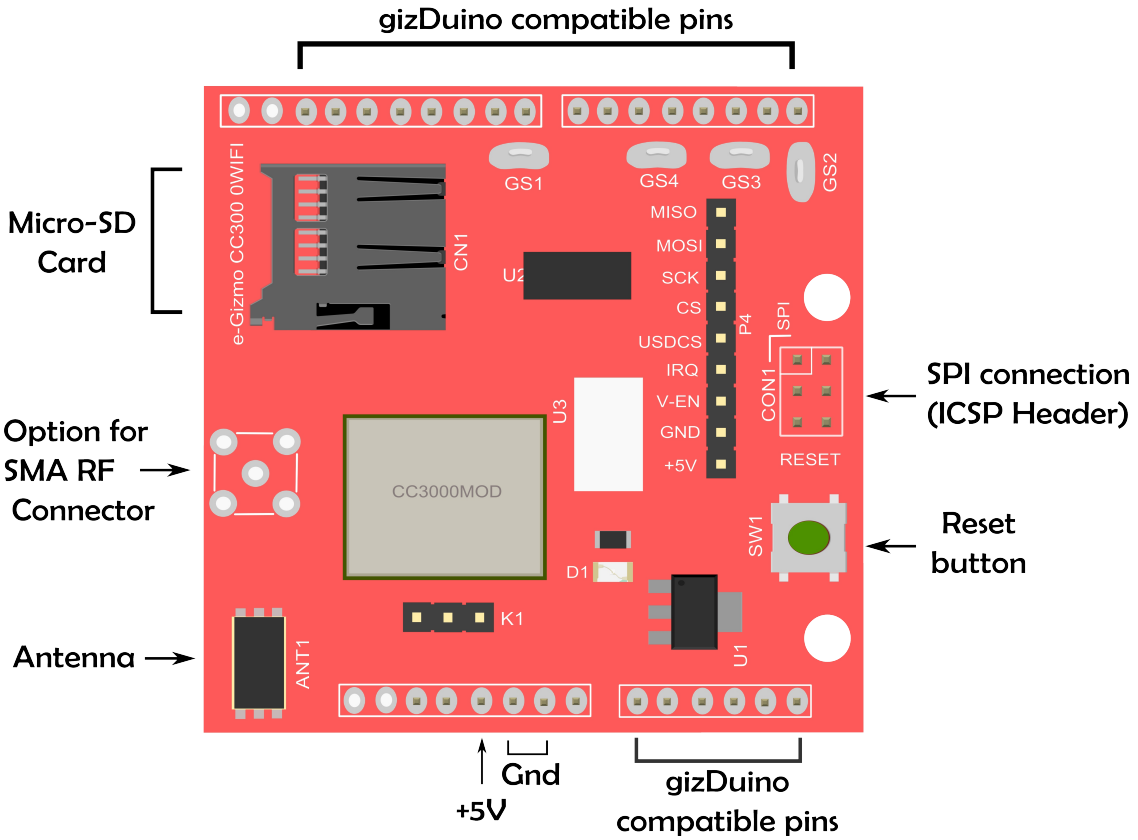


Figure 1. Major parts of CC3000 WIFI Shield (Front)

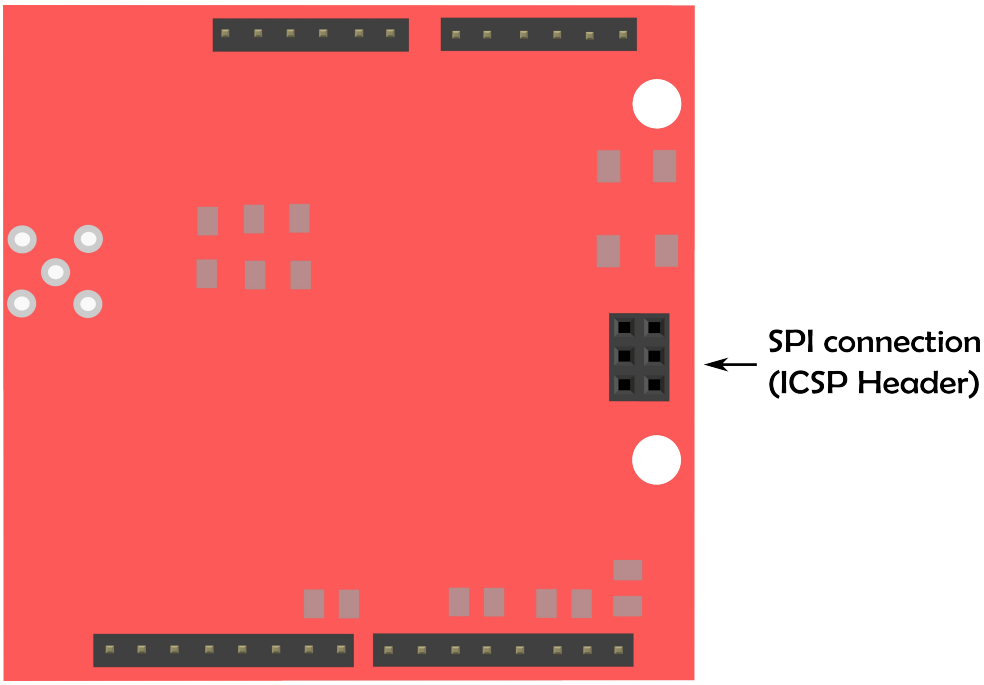


Figure 2. Major parts of CC3000 WIFI Shield (Back)

*Table 1. SPI connection (ICSP Header)

I.D	Description
MISO	Interface SPI data out (SPI_DOUT) pin 13
MOSI	Interface SPI data in (SPI_DIN) pin 15
SCK	Interface SPI clock (SPI_CLK) pin 17
CS	Interface SPI chip-select (SPI_CS) pin 12
USDCS	connected to CS (CN1) E-USD pin
IRQ	Interface SPI interrupt (SPI_IRQ) pin 14
V-EN	Module enable. Connect to host GPIO. (VBAT_SW_EN) pin 26
GND	Ground
+5V	Supply voltage

*Table 2. CON1 SPI Connection

gizDuino Boards	MOSI	MISO	SCK	SS
168 or 328	ICSP(4) 11	ICSP(1) 12	ICSP(3) 13	10
+ 164/324/644	ICSP(4) 11	ICSP(1) 12	ICSP(3) 13	10
X 1281	ICSP(4) 11	ICSP(1) 12	ICSP(30) 13	10

*References :

http://www.alldatasheet.com/datasheet-pdf/pdf/489650/TI/CC3000MOD.html

http://arduino.cc/en/Reference/SPI

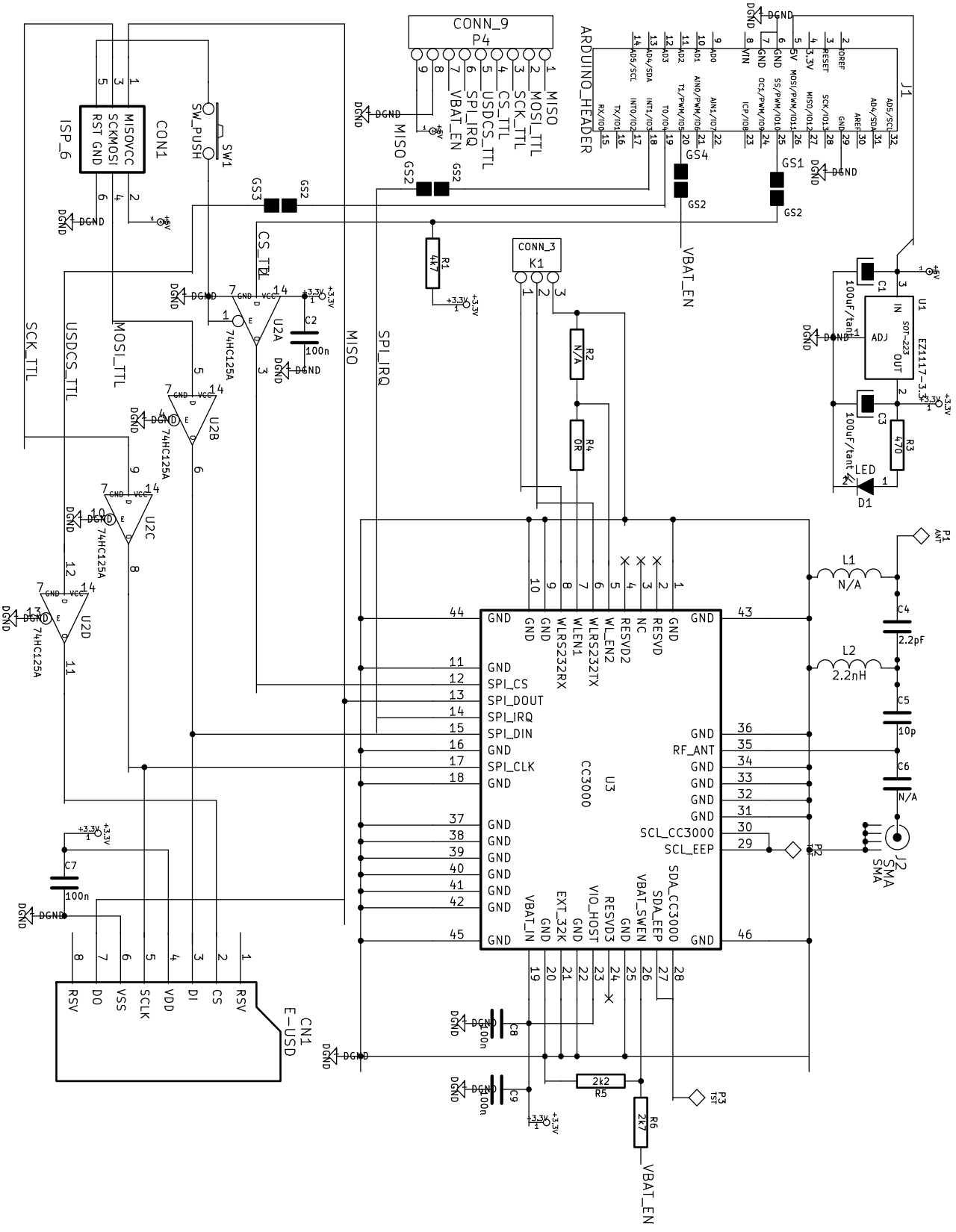


Figure 3. *Schematic diagram of CC3000 WIFI Shield.*

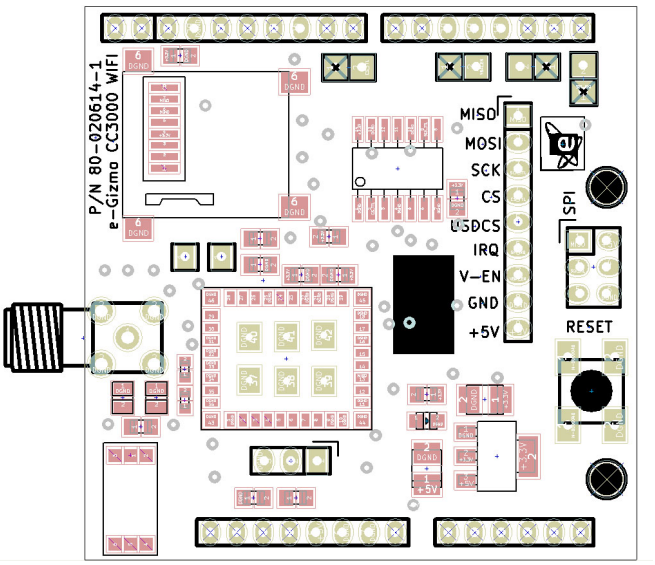


Figure 4. Component

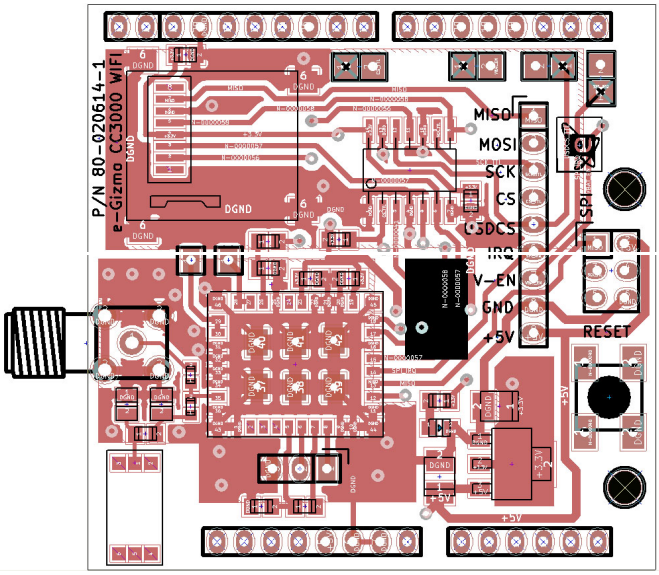


Figure 6. Component Side (F.Cu)

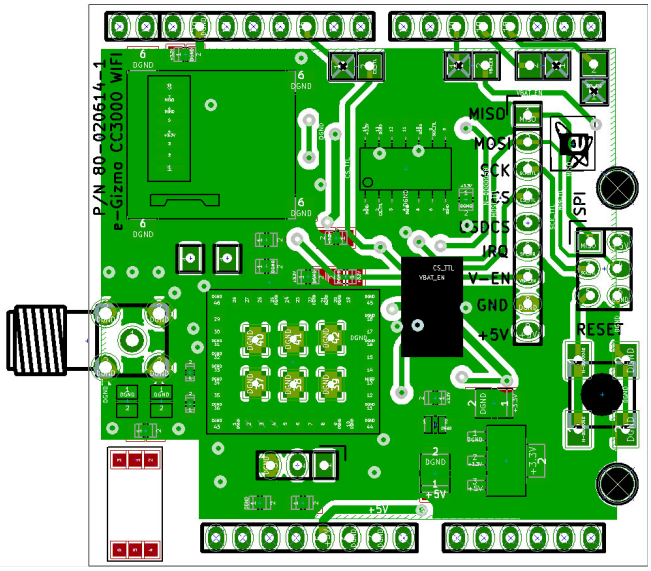


Figure 5. Copper Side (B.Cu)

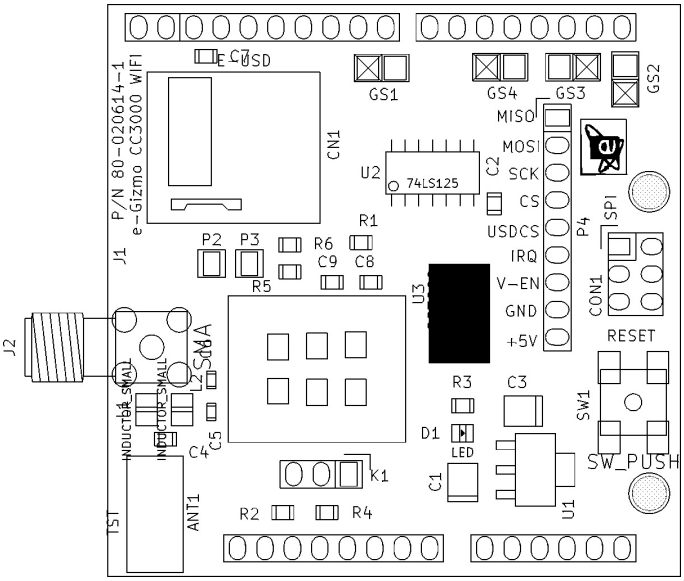


Figure 7. Parts placements

Gizduino Patchfiles

Download the latest **gizDuinoPatch - 0502141** from e-gizmoCD List>Gizduino(Softwares)> gizDuinoPatch-050214.zip. Then copy and replace the "gizduino -" folder to:

Arduino>hardware>gizduino -

Restart your Arduino IDE.

gizDuinoPatch:

https://www.dropbox.com/s/d777uc1unbx21e2/gizDuinoPatch%20-%20050214.rar

Figure 8. Update the gizDuino Patch "gizduino-"

Adafruit_CC3000 Library

Download the **Adafruit_CC3000_ Library**.

Add the Adafruit_CC3000_Library to:

Arduino>libraries

https://learn.adafruit.com/adafruit-cc3000-wifi/cc3000-library-software

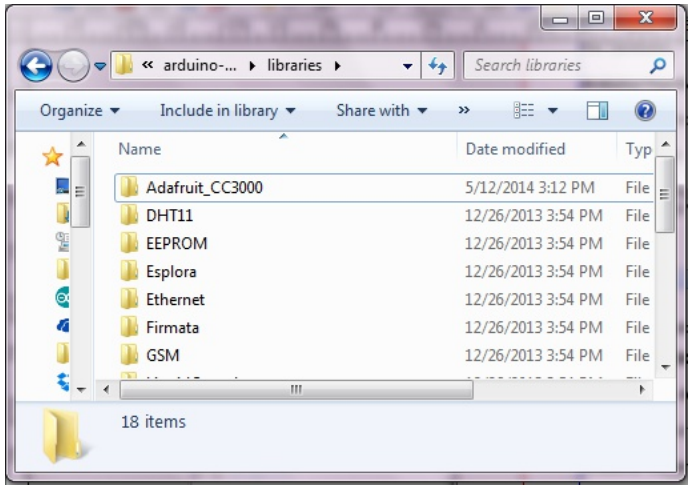
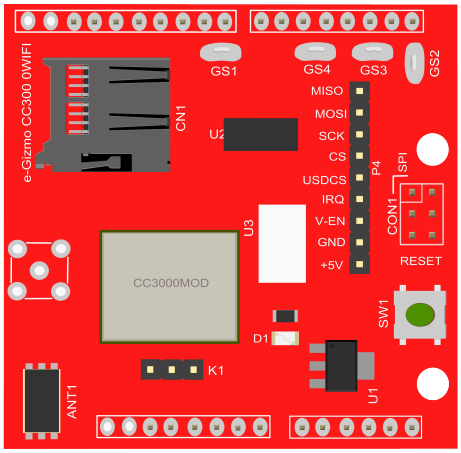


Figure 9. Adding new library



CC3000 WIFI shield
Compatible to gizDuino +

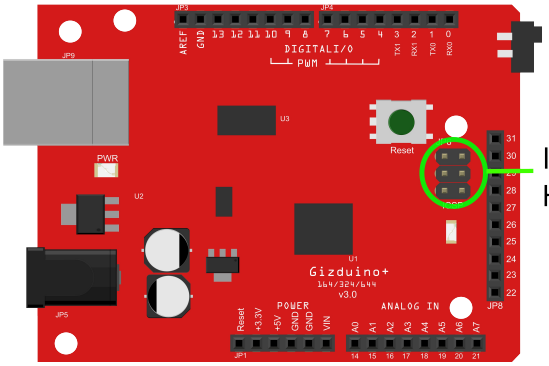


Figure . Sample Application of e-Gizmo CC3000 WIFI Shield with Gizduino + 644

Place also a 2x3 connector for the ICSP header connections to the CC3000.

Attach the CC300 WIFI Shield to Gizduno + 644 like on the Sample apllication.

/*
WirelessControllerWifi is one of the applicatioin of CC3000 Wifi Module
- This sample application code simply turns and off an LED remotely via Wifi.
- It is suggested to use ATmega644 to avoid fruther RAM issues.
- The IP address given to CC3000 by the Acess Point is static. Therefore, it is advisable to make sure that the IP address to the browser is correct.

Execution:
1. Once uploaded to the microcontroller, open the serial.

2. Wait for successful connection.
3. When DHCP request is successful, Copy the IPaddress given to your device.
4. Enter the IPaddress to your browser.
5. The small Wireless Controller webpage will then be loaded.
6. Click ON Button to turn on the LED and OFF buttn to turn it off.

Wiring Connection:
1. Connect +pin of LED (series with current limiting resistor if needed) to pin 14(A0).
- pin to GND. This will be the LED to be controlled.
2. Connect +pin to LED (series with current limiting resistor if needed) to pin 9.
- pin of GND. This will bt the wifi connection indicator.

Notes:
Reserved pins for CC3000 and SD Card communication are as follows.
CC3000 Breakout Board Gizduino
SCK <----------> Digital pin 13
MISO <----------> Digital pin 12
MOSI <----------> Digital pin 11
CS <----------> Digital pin 10
V_EN <----------> Digital pin 5
uSDS <----------> Digital pin 4
IRQ <----------> Digital pin 3

References:
- Adafruit_CC3000 ChatServer.ino
- Ethernet WebServer.ino
- Important Libraries from Adafruit:
https://learn.adafruit.com/adafruit-cc3000-wifi/cc3000-library-software

On: 28 APR 14
By: e-Gizmo Mechatronix Central
*/

Download the Sample Codes in

e-Gizmo Complete LIST>CC3000 WIFI Shield

https://www.dropbox.com/sh/n2hxrccdgwak5b2/rRWTg2RRf5

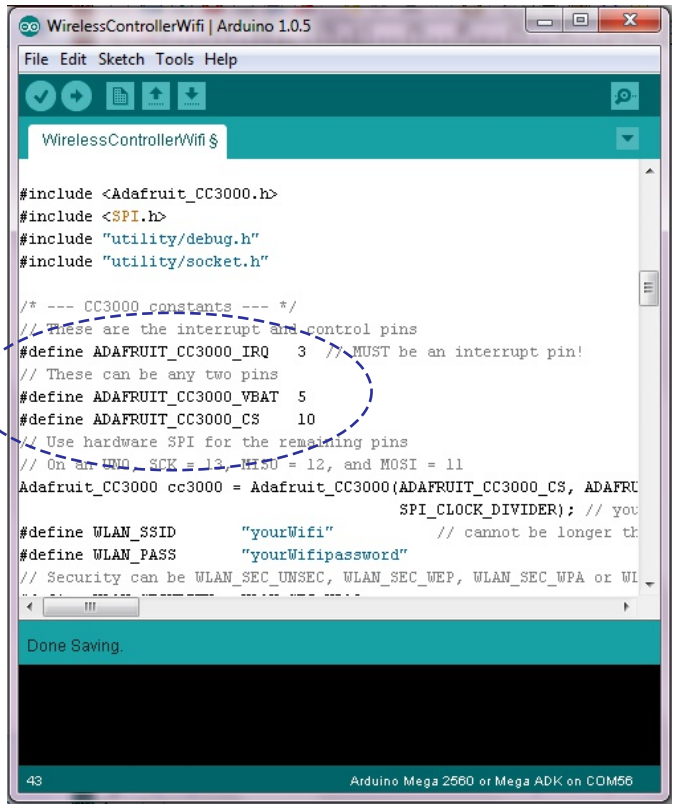


Figure 11. Modify the pin assignment.