

WizFi360

Application Note – http server

Version 1.0.0



<http://www.wiznet.io/>

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1 Document Revision History

Version	Date	Descriptions
Ver. 1.0.0	1AUG2019	Initial Release

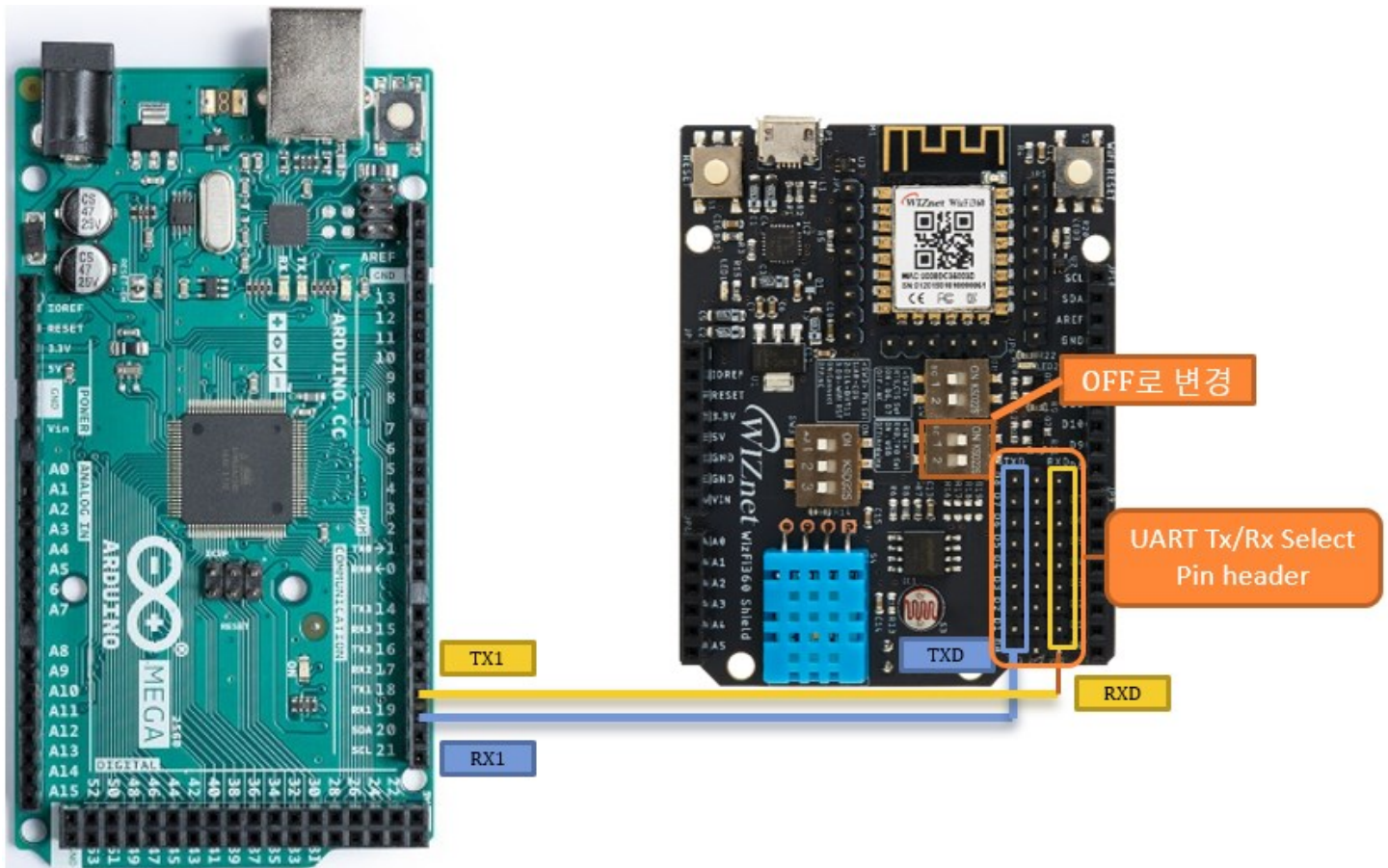
2 Introduction

HTTP(Hypertext transfer protocol) is a communication protocol for exchanging data between server and client on the Web. HTTP exchanges data in the form that the client sends the request and the server sends the reply to the request. At this time, Server transmits response such as HTML, JSON, etc., and uses port 80. HTTP is a TCP-based protocol. WizFi360 can communicate the HTTP communication by creating TCP Server. The HTTP protocol must be implemented by the user.

3 Hardware Environment

This document uses Arduino Mega2560 and WizFi360EVB. To communicate with the WizFi360EVB using UART1 in the Arduino Code, connect the TX1 and RX1 pins of Arduino to the RXD and TXD pins of the WizFi360EVB. In the WizFi360EVB, change the RXD / TXD Selector to OFF to enable UART communication via the pin, not the USB.

You can also use D0 ~ D8 Pin as TXD / RXD Pin by using UART Select Pin header. If you use it, you can connect WizFi360 without Wiring by placing WizFi360 on Arduino.

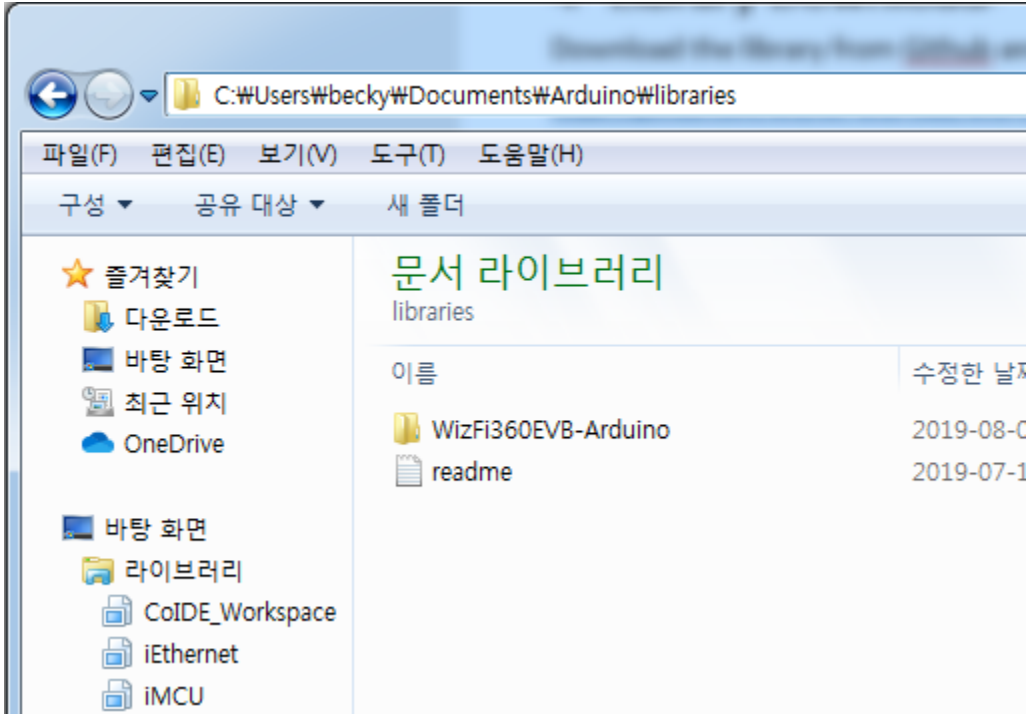


https://store-cdn.arduino.cc/usa/catalog/product/cache/1/image/1000x750/f8876a31b63532bbba4e781c30024a0a/s/0/a000067_front_1.jpg

4 Library Download

Download the library from Github and move it to the Arduino libraries folder as below.

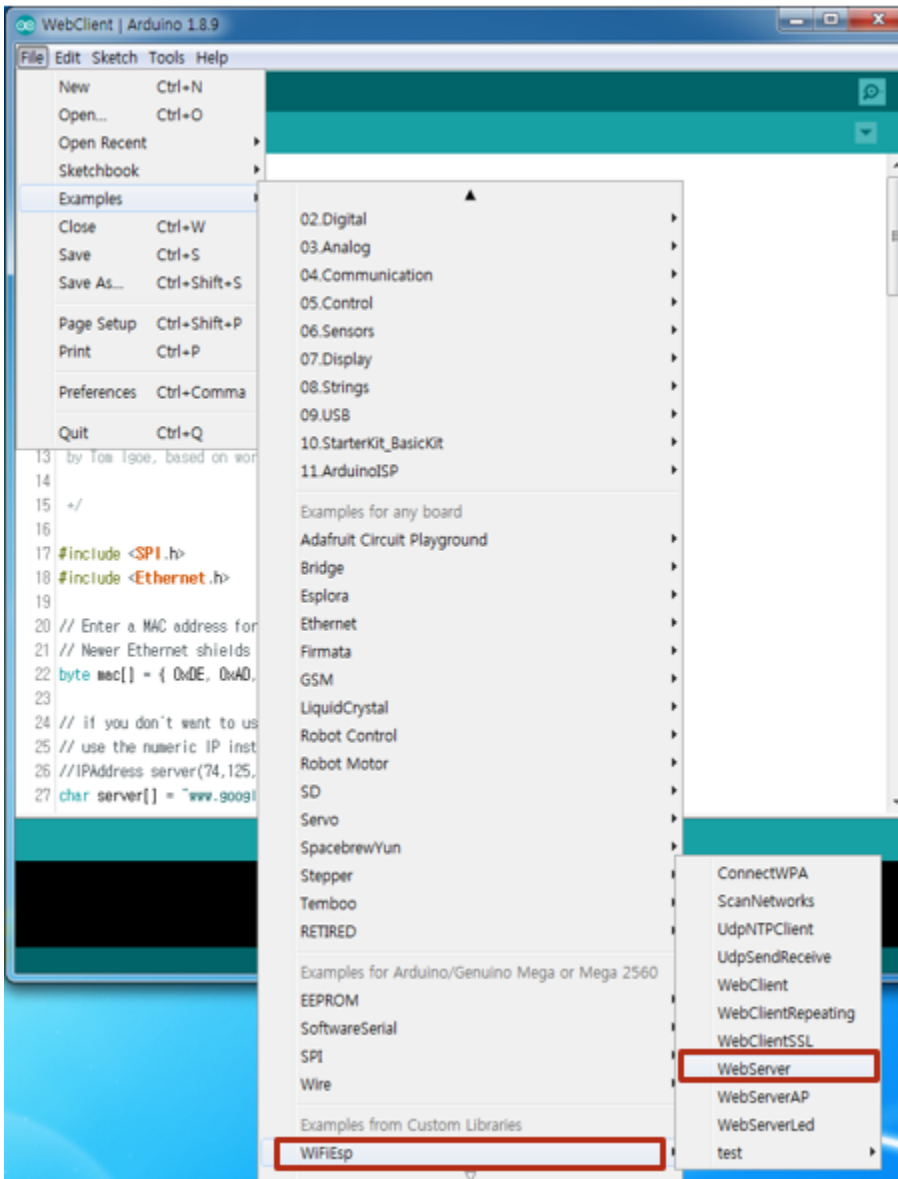
<https://github.com/WIZnet-WizFi360/WizFi360EVB-Arduino>



5 RUN

5.1 Example Open

Launch Arduino and Open the WebServer example as shown below.



5.2 Code

Change the value of ssid and pass to join information of AP to connect WizFi360.

Serial1 is the serial communicating with Arduino and WizFi360 and should have the same baud rate as WizFi360. The factory default baud rate for WizFi360 is 115200, and if you have not changed it, enter 115200.

```
16 // Emulate Serial1 on pins 6/7 if not present
17 #ifndef HAVE_HWSERIAL1
18 #include "SoftwareSerial.h"
19 SoftwareSerial Serial1(6, 7); // RX, TX
20 #endif
21
22 char ssid[] = "wiznet1"; // your network SSID (name)
23 char pass[] = "maker0701"; // your network password
24 int status = WL_IDLE_STATUS; // the Wifi radio's status
25 int reqCount = 0; // number of requests received
26
27 WiFiEspServer server(80);
28
29
30 void setup()
31 {
32 // initialize serial for debugging
33 Serial.begin(115200);
34 // initialize serial for ESP module
35 Serial1.begin(115200);
36 // initialize ESP module
37 WiFi.init(&Serial1);
38
```

Arduino (WizFi360EVB) transmits the following HTML data when Web client connects. If you want to send other data, you can modify it below.



```
82 client.print(
83 "HTTP/1.1 200 OK\r\n"
84 "Content-Type: text/html\r\n"
85 "Connection: close\r\n" // the connection will be closed after complet
86 "Refresh: 20\r\n" // refresh the page automatically every 20 sec
87 "\r\n");
88 client.print("<!DOCTYPE HTML>\r\n");
89 client.print("<html>\r\n");
90 client.print("<h1>Hello World!</h1>\r\n");
91 client.print("Requests received: ");
92 client.print(++reqCount);
93 client.print("<br>\r\n");
94 client.print("Analog input A0: ");
95 client.print(analogRead(0));
96 client.print("<br>\r\n");
97 client.print("</html>\r\n");
98 break;
99 }
```

5.3 Result

- ① Check the firmware version. The current firmware version is 3.0.0.
- ② Attempted to connect to the AP, succeeded, and assigned a virtual IP address of 192.168.1.118.
- ③ TCP Server was created and WebServer was opened.
- ④ Check the connection of the client and receive the Get method data from the client
- ⑤ I sent HTML data to the client.

The image shows a terminal window on the left and a mobile browser on the right. The terminal window displays the following logs:

```
[WIFIEsp] Initializing ESP module
[WIFIEsp] Warning: Unsupported firmware 3.0.0
[WIFIEsp] Attempting to connect to AP SSID: wiznet
[WIFIEsp] Connected to wiznet!
You're connected to the network
SSID: wiznet
IP Address: 192.168.1.118

To see this page in action, open a browser to http://192.168.1.118

[WIFIEsp] Server started on port 80
[WIFIEsp] New client 0
New client
GET / HTTP/1.1
Host: 192.168.1.118
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
User-Agent: Mozilla/5.0 (iPhone; CPU iPhone OS 12_3_1 like Mac OS X) AppleWebKit/605.1.15 (KHTML, like Gecko)
Accept-Language: ko-kr
Cache-Control: max-age=0
Accept-Encoding: gzip, deflate

Sending response
[WIFIEsp] >>> TIMEOUT >>>
[WIFIEsp] Data packet send error (2)
[WIFIEsp] Failed to write to socket 0
[WIFIEsp] Disconnecting 0
Client disconnected
```

The mobile browser shows the address bar with the IP address 192.168.1.118 and the page content:

Hello World!
Requests received: 3
Analog input A0: 297

Red callouts with arrows point to specific parts of the terminal logs:

- ① Check firmware version
- ② Connected to AP
- ③ Web Server Start
- ④ Check client connection & Receive data
- ⑤ Transmit data to client

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