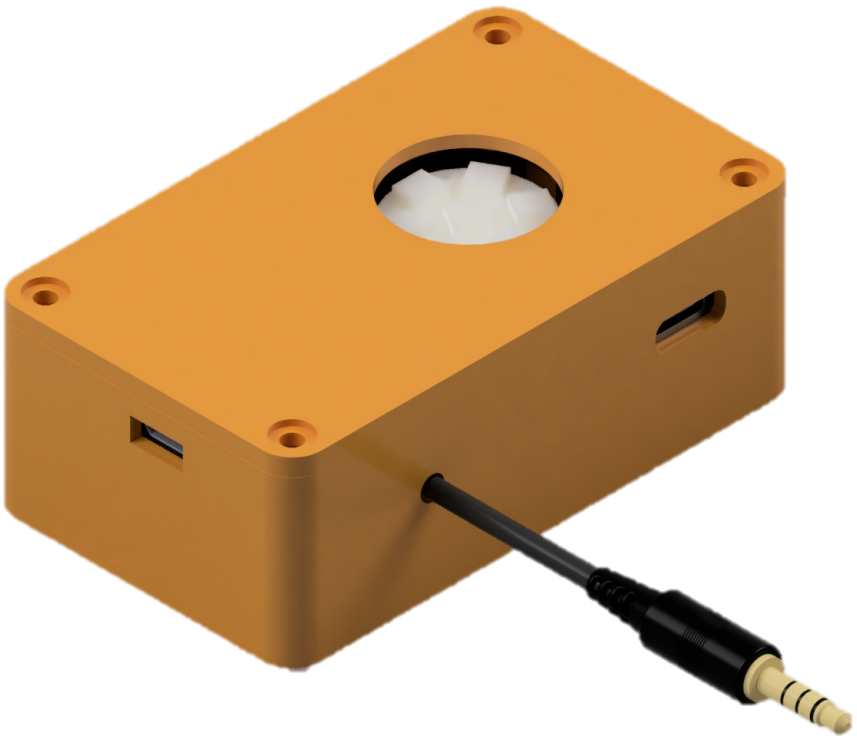
Accessible Wireless Transceiver

User Manual

Updated: May 2023

V 2.0



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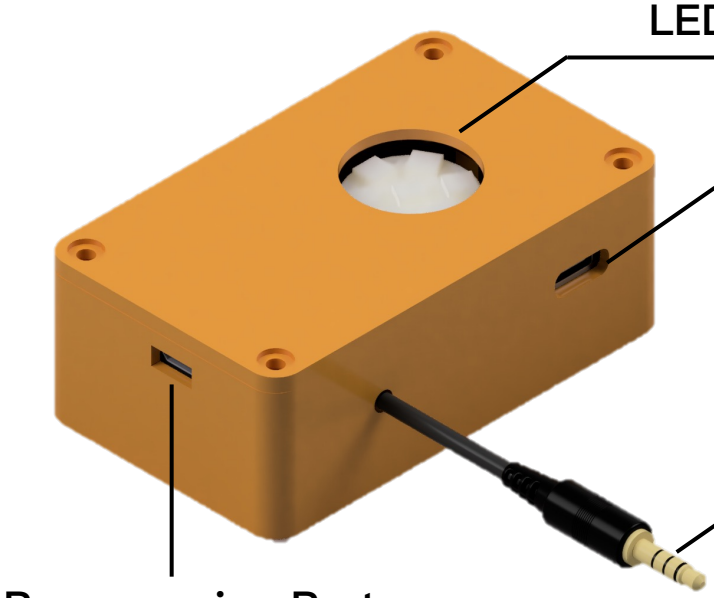
Hardware



LED Status Indicator

Charging Port

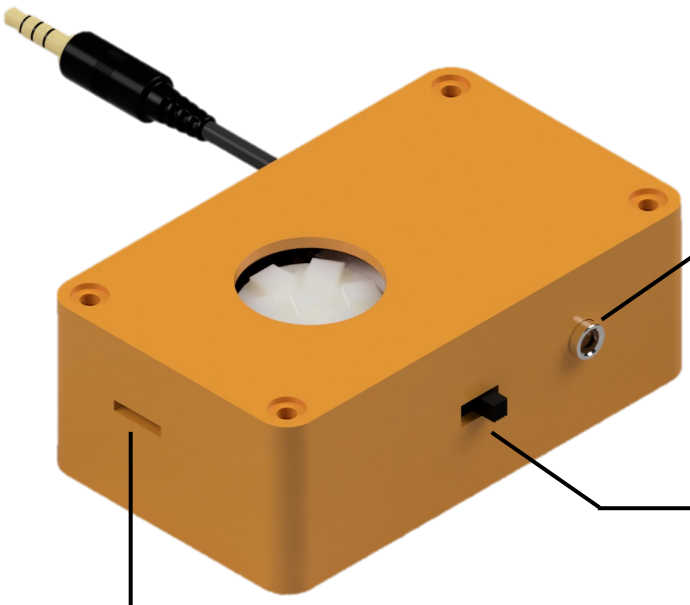
USB-Type C

3.5mm Mono Jack

For Switch Activation

Programming Port

Micro-USB



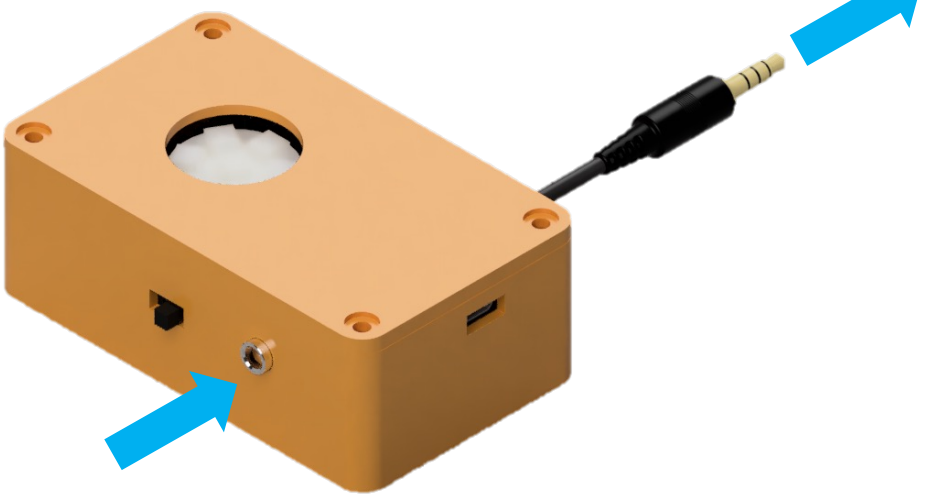
3.5mm Female Jack

For external switch connection

Power Switch

Battery Indicator

Connection



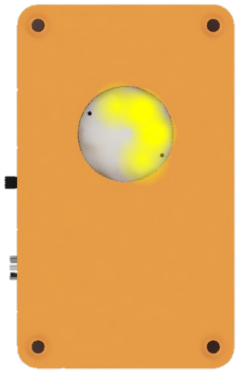
[optional]

Any hardware switch that has 3.5mm mono Jack

This port is served as secondary control that accepts any button presses and pass on the connection to the switch accessible device

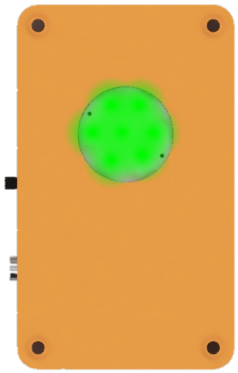
- Do not poke or hard press, or overcharge the Lithium-ion battery

Usage

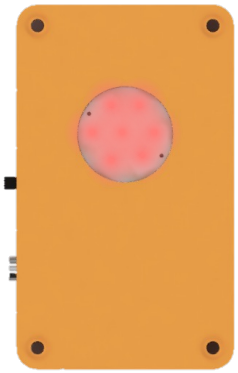


Step 1

Power on the device
If successful, the LED will display a yellow loading animation.



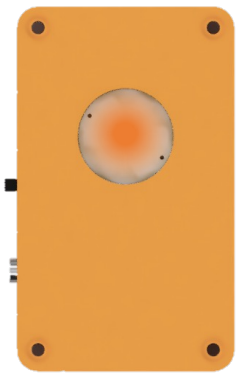
Connected to WiFi



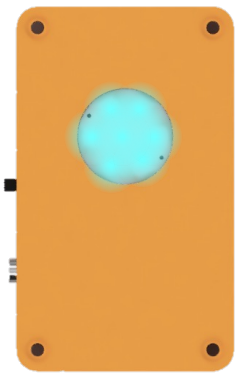
Connection Unsuccessful

Step 2

Green indicator means successful Wi-Fi connection, Red Light means Wi-Fi connection failed.



Normal Stand-by



Activated Switch Engaged

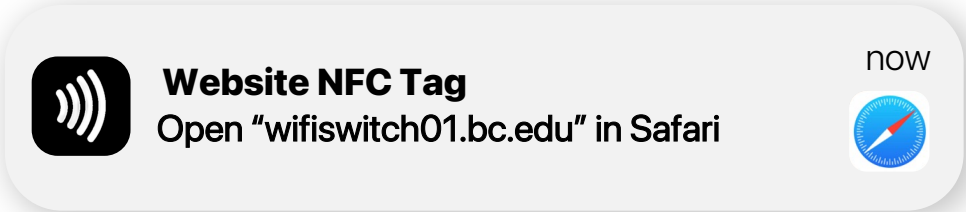
Step 3

After successful connection, the device will show a single orange indicator and entering stand-by, waiting for activation.

Visit Device Settings

Step 1

Make Sure your phone is connected to the
same Wi-Fi Network as the Wireless Transceiver



Step 2

Tap your phone on the front of the Wireless Transceiver to access the website hosted by the transceiver.

Alternatively

If the transceiver is connected to Boston College "eduroam" network, manually visit http://wifiswitch01.bc.edu on your browser.

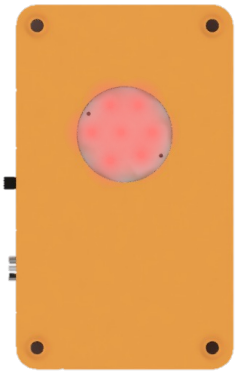
If the transceiver is connected to other home Wi-Fi, manually visit http://wifiswitch01.local on your browser.

* If the webpage failed to load, check if the wireless transceiver is turned on and connected to the network, Or restart the transceiver if necessary.

Troubleshoot

Q: After I turn on the switch, there is no yellow light?

A: Switch off, wait for the blue battery indicator to go off and try again.



Q: What to do if I got red lights on?

A: This means that the Wi-Fi connection is unsuccessful. Check Wi-Fi availability/signal strength/ or check if Wi-Fi password is changed.

By default, the wireless transceiver is configured to connect to Boston College's **"eduroam"** network (unless someone changed ***wireless_config.h*** file in the source code)

In the case of changed Wi-Fi credentials (password, login), refer to **"How to configure Wi-Fi"** page and reupload the program.

How to configure Wi-Fi

Step 1:

Find the source code for this project under:
https://github.com/EvanZhou1999/Accessible_wireless_transceiver
download it, and open with Arduino IDE.

Step 2:

Locate “wireless_config.h” file and open it.

```
1  // ========================================================
2  // This is the header file for storing wireless configurations
3  // ========================================================
4
5
6  // WiFi - Configuration
7  //=================================================
8  const char* ssid = "ENTER YOUR WIFI NAME HERE";
9  const char* password = "ENTER YOUR WIFI PASSWORD HERE";
10 //=================================================
11
12 // WiFi - WAP2 Enterprise Configuration
13 // set this to true if you want to connect to eduroam
14 // set this to false if you want to connect to other Wi-Fi
15 bool UseWAPEnterprise = true;
16 //=================================================
17 const char* WAP2_SSID = "eduroam";
18 const char* EAP_IDENTITY = "ENTER YOUR EDUROAM USERNAME WITH @BC.EDU";
19 const char* EAP_PASSWORD = "ENTER YOUR EDUROAM PASSWORD";
20 //=================================================
21
22
23 // new Mac Address (not used)
24 // !!Becareful with reuse this code and cause duplicated Mac Address!!
25 uint8_t newMACAddress[] = {0x32, 0xAE, 0xA4, 0x07, 0x0D, 0x66};
26
27 // Server Configuration
28 // Once domain/Host name is changed, wait sometime for it to propagate (1-2h)
29 const char* domainName = "wifiswitch01";
```

If you want to connect to eduroam:

1. Put your username on line 18 after EAP_IDENTITY (with double quotes)
2. Put your password on line 19 after EAP_PASSWORD (with double quotes)
3. Change line 15 to:

    bool UseWAPEnterprise = true;

How to configure Wi-Fi

Continued

If you want to connect to other Wi-Fi networks:

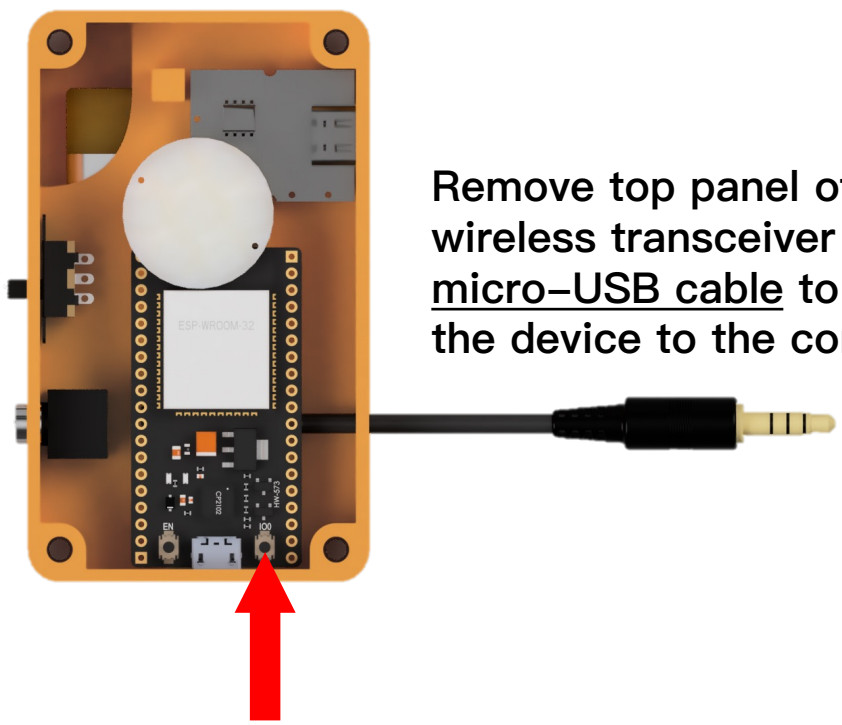
1. Put your Wi-Fi name on line 8 after ssid (with double quotes)
2. Put your password on line 9 after password (with double quotes)
3. Change line 15 to:

    bool UseWAPEnterprise = false;

Step 3:

Save file and hit upload button to upload the program to device

Follow instructions online to setup Arduino IDE for Esp32-WROOM-DA Module:



Remove top panel of the wireless transceiver and use a micro-USB cable to connect the device to the computer.

Hold down this button while the console says “Uploading....”,