Accessible
Wireless Transceiver
User Manual
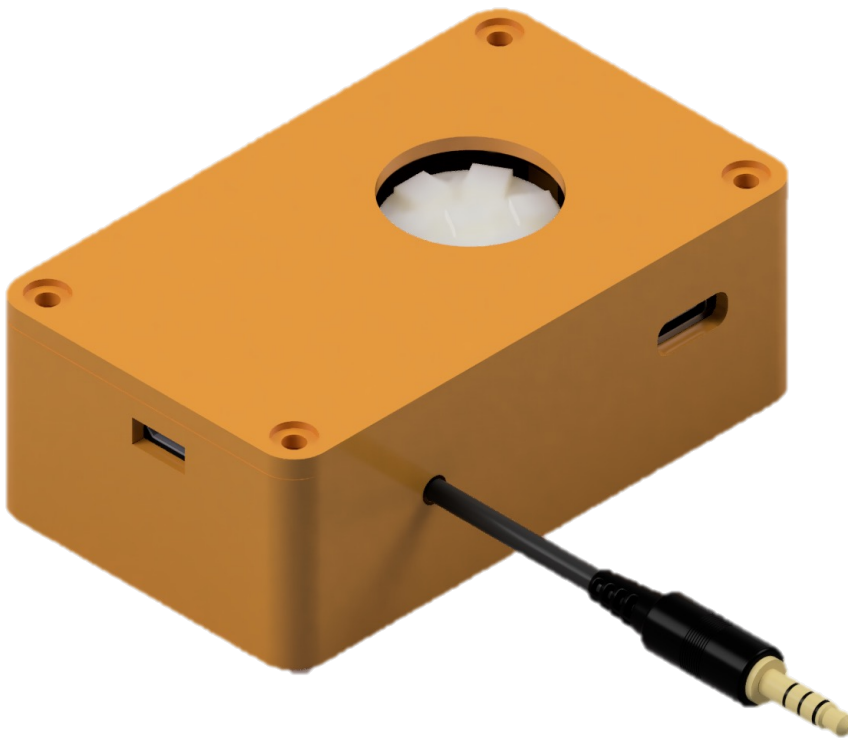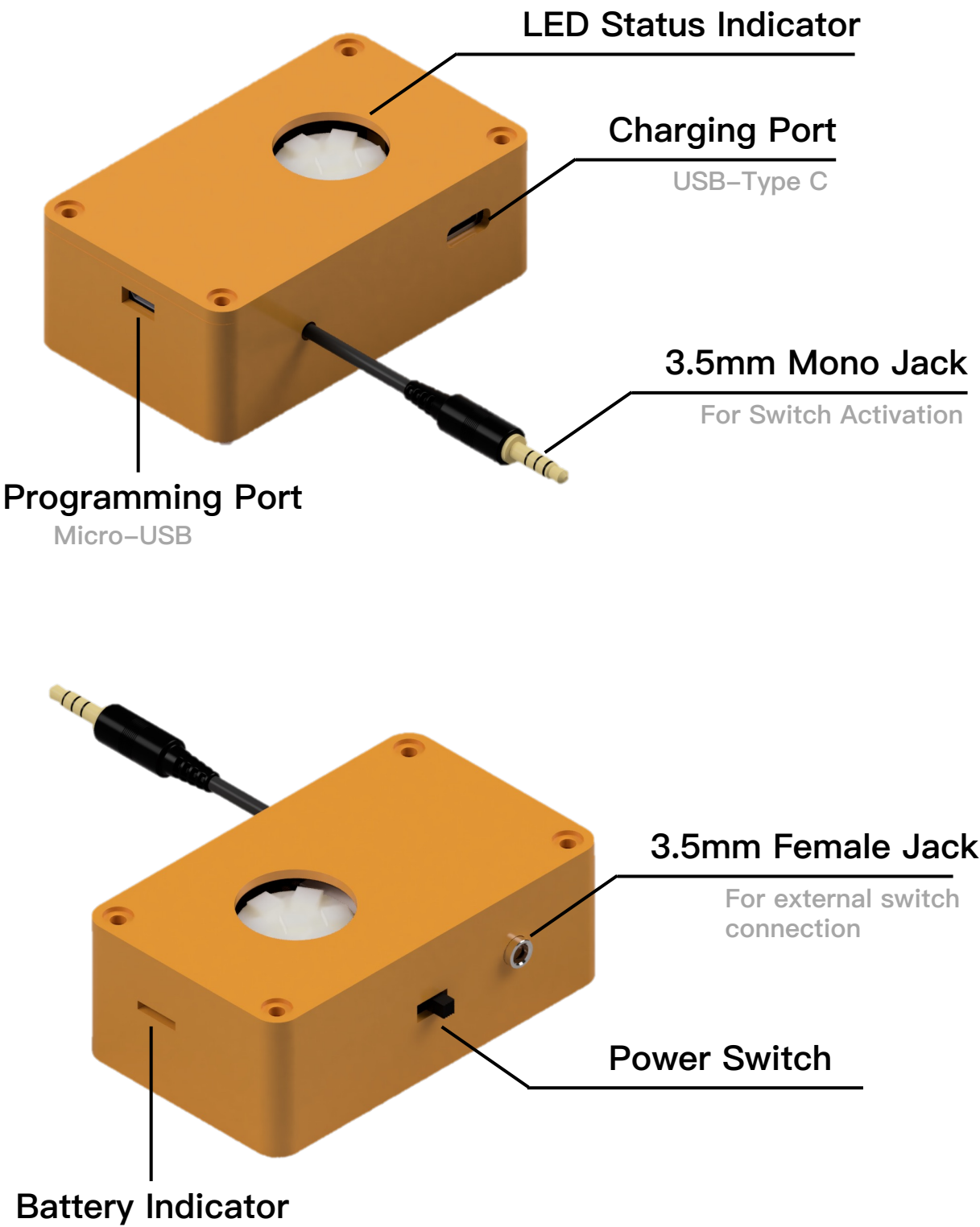
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Hardware

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

To Switch Accessible Device
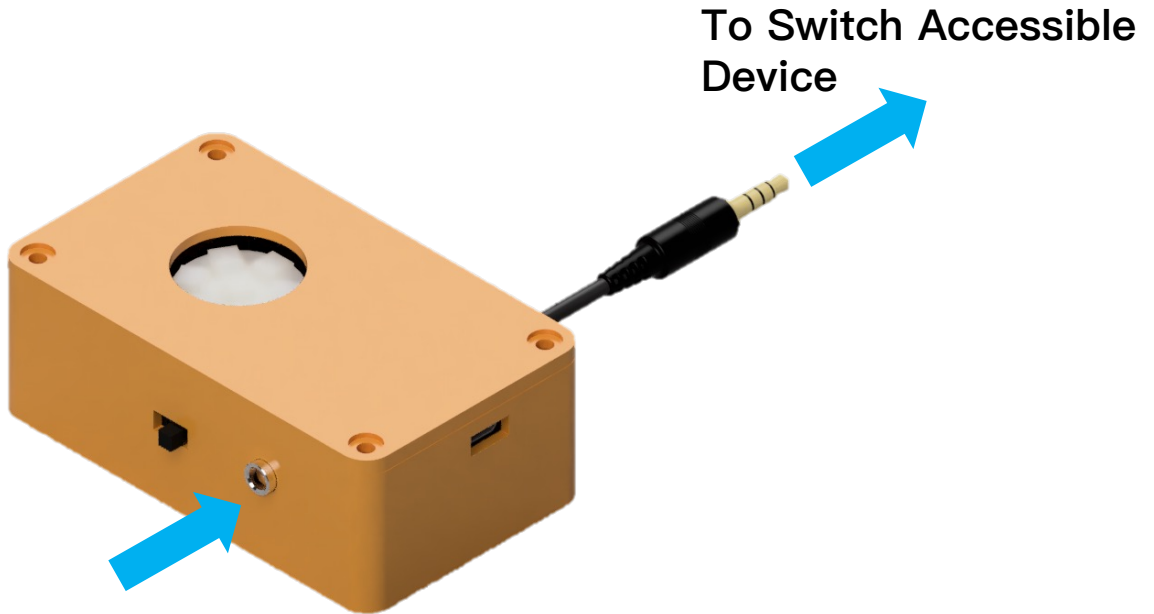
[optional]

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
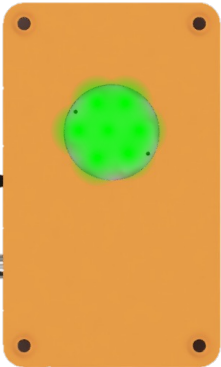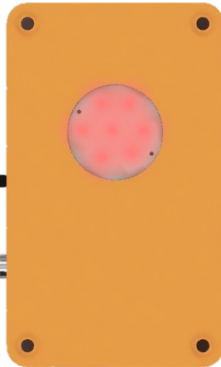
Usage

Step 1

Power on the device
If successful, the LED will display a <u>yellow</u> loading animation.

Step 2

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

Connected to WiFi

Connection Unsuccessful

Step 3

After successful connection, the device will show a single orange indicator and entering stand–by, waiting for activation.
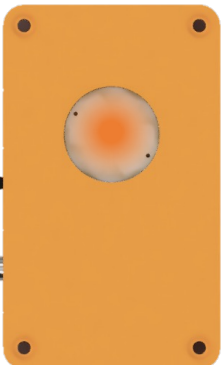
Normal Stand–by
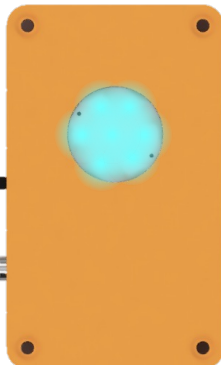
Activated Switch Engaged

Visit Device Settings

Step 1

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

Website NFC Tag
Open "wifiswitch01.bc.edu" in Safari

now

NFC Tag
Area

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
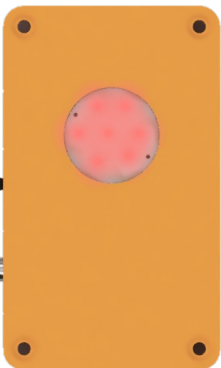on your browser.

* 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, <u>wait for the blue battery indicator to go off</u> and try again.

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

A: This means that the <u>Wi–Fi connection is unsuccessful</u>. 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 <u>**"How to configure Wi–Fi"**</u> page and reupload the program.

How to configure Wi–Fi

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

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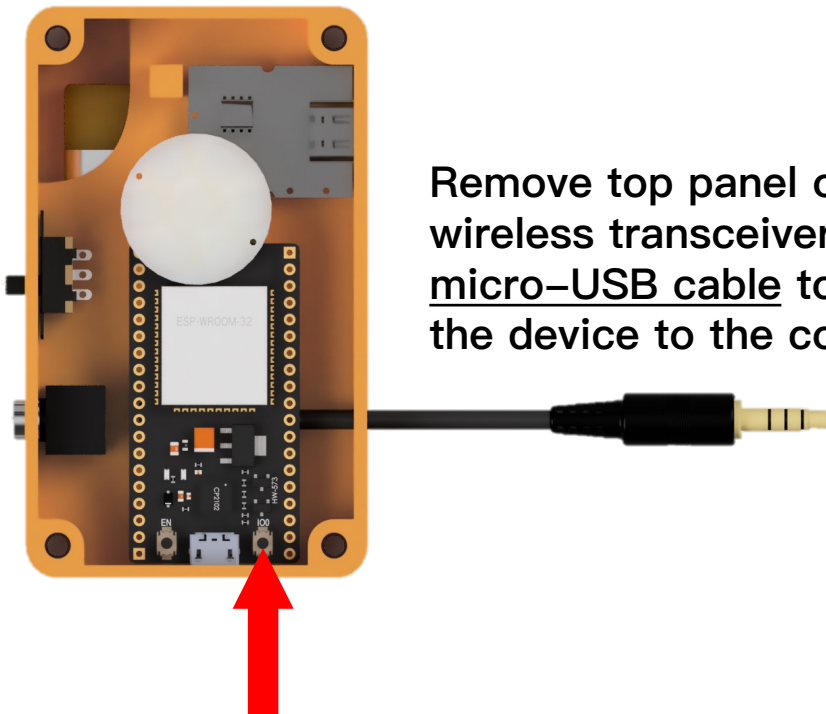
Remove top panel of the wireless transceiver and use a micro−USB cable to connect the device to the computer.

Hold down this button while the console says "Uploading….",