

# Unscheduled budgettalk

Suprise!



# About the badge

- Runs MicroPython
- Connectivity over USB, WiFi and IR
- Has an appstore ([badge.disobey.fi](http://badge.disobey.fi))

## Features

- 6 touch buttons
- 128x64 LCD screen
- 6 RGB LEDs
- IR transmitter and receiver
- Buzzer
- WiFi
- USB serial connection



# What can you do with it?

- Run the rainbow app
- Enjoy the blank screen
- Drain batteries



# What can you do with it?

- Have it show your (nick)name
- Install apps from the hatchery ([badge.disobey.fi](http://badge.disobey.fi))
- Program your own apps in Python



# Features

- 6 touch buttons
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- IR transmitter and receiver
- Buzzer
- WiFi
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BACK / CANCEL

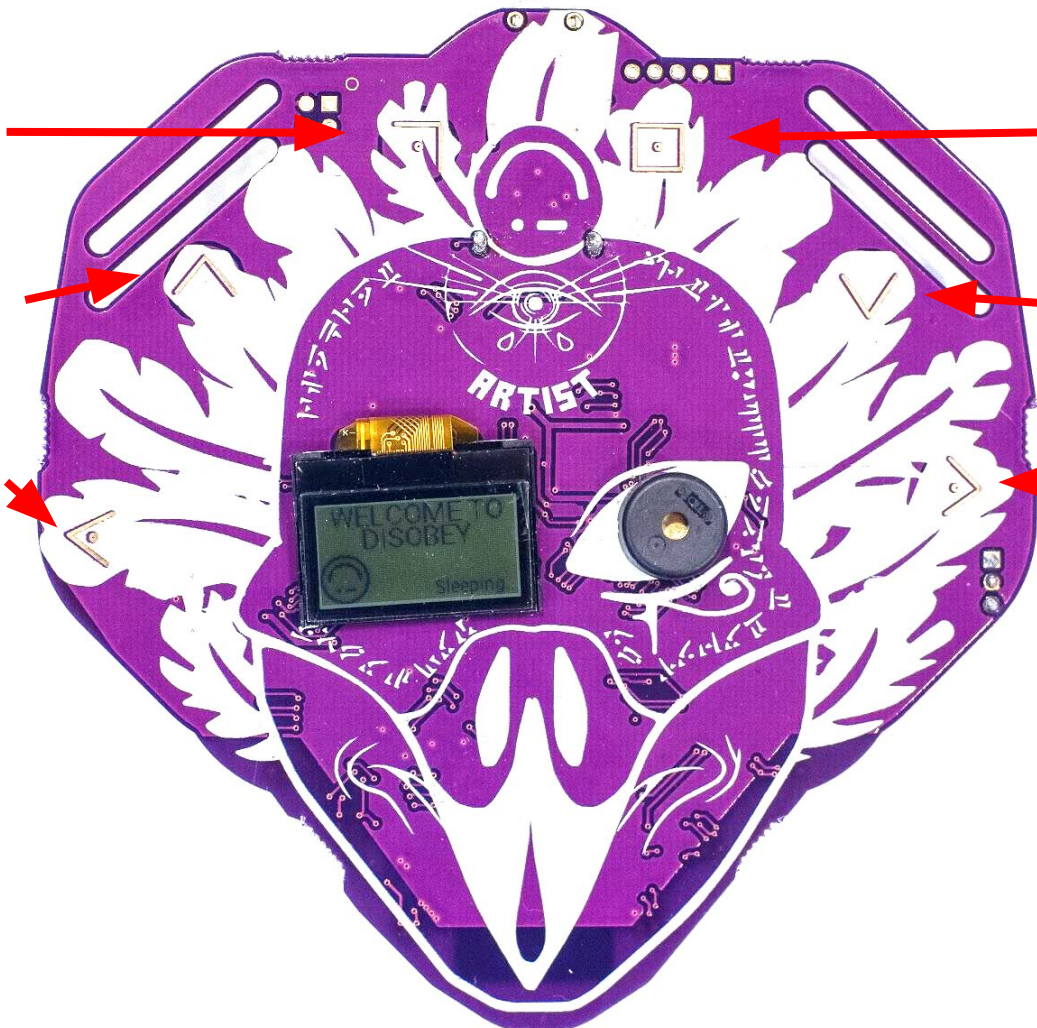
OK / START

UP

DOWN

LEFT (/ DELETE)

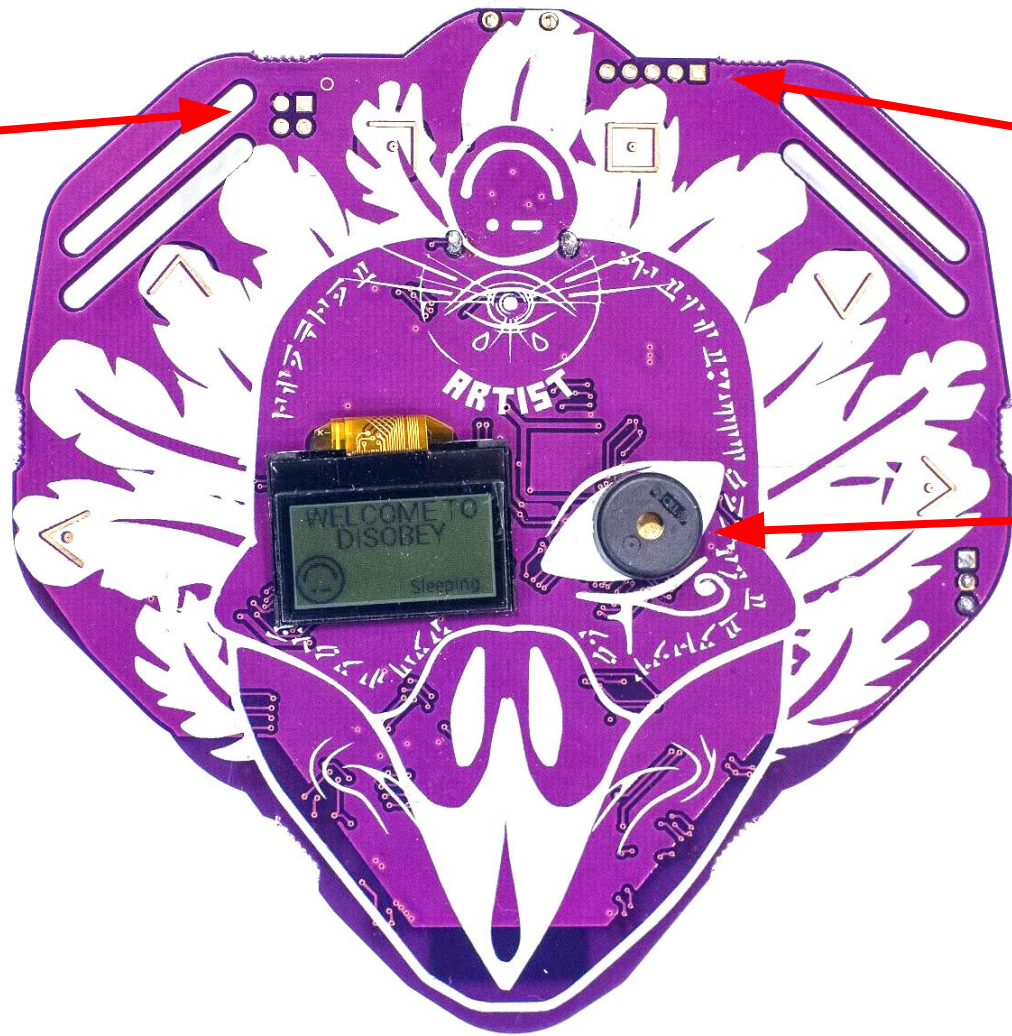
RIGHT



Shitty Badge Addon™  
connector

Debug/programming  
connector (do not use)

Speaker



Reset button

USB serial interface

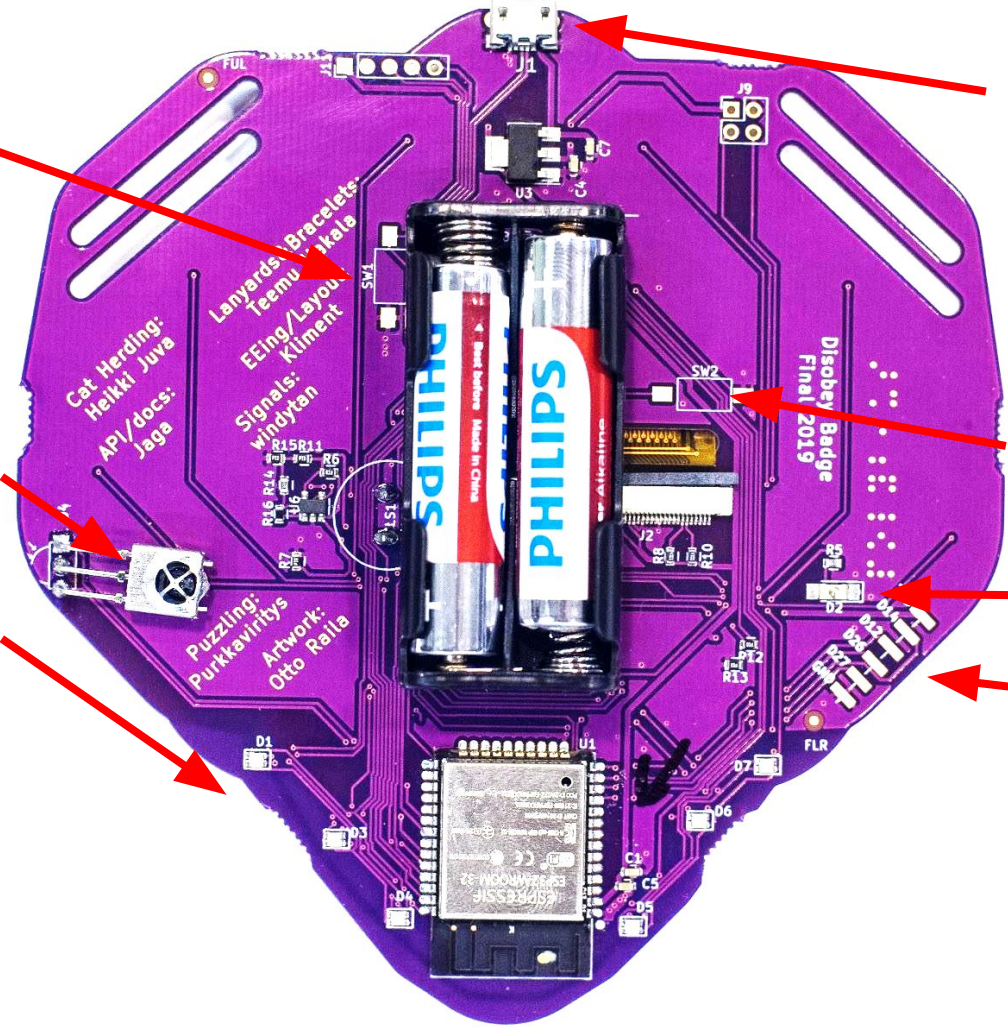
Infrared receiver

DFU / programming button

LEDs (6x)

Infrared transmitter

Extra GPIO pins (expansion header)





# Installing apps

for when the WiFi works...



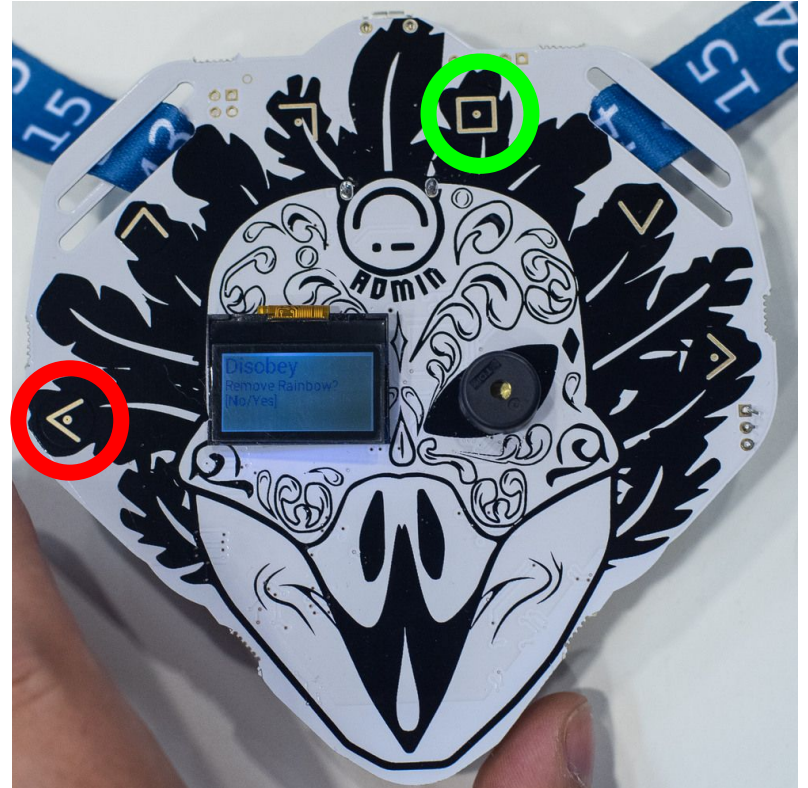


# Main menu

- Installed apps
- Installer
- Update apps
- Update firmware
- Home

# How to delete apps

- Go to the main menu
- Select the app you want to delete
- Press the **LEFT** button
- Press the **OK** button



## Developing apps

- <https://badge.disobey.fi>

- **Contains documentation!**

- Publish apps written in MicroPython

## Make more apps!

(More app examples at <https://badge.team>)

# Disobey 2019 BadgeHatchery

Contributors: 37 Eggs: 21



[BADGE USER GUIDE](#)

[CODING HELP](#)

Name	Revision	Size of zip	Size of content	Category	Last release
<a href="#">service test</a>	1	533	493	unusable	1 hour ago
<a href="#">ssd1306 demo</a>	5	1375	3556	hacking	11 hours ago
<a href="#">Imperial March 2</a>	3	962	2463	silly	12 hours ago
<a href="#">Imperial March</a>	5	966	2463	silly	12 hours ago
<a href="#">purge</a>	1	421	445	utility	13 hours ago
<a href="#">Polybius</a>	1	197	0	uncategorised	14 hours ago
<a href="#">demopartytime</a>	4	644	1019	graphics	15 hours ago
<a href="#">seppo_kaupassa</a>	21	851	3854	unusable	13 hours ago
<a href="#">kit</a>	6	365	327	wearable	15 hours ago
<a href="#">Random</a>	1	417	432	unusable	17 hours ago
<a href="#">efunen</a>	11	581	823	graphics	16 hours ago
<a href="#">Rainbow2</a>	3	496	594	graphics	14 hours ago
<a href="#">Rainbow</a>	1	440	445	event_related	20 hours ago
<a href="#">Schedule</a>	6	2058	7661	event_related	18 hours ago
<a href="#">xxx</a>	3	251	37	wearable	22 hours ago
<a href="#">found</a>	1	553	867	event_related	23 hours ago
<a href="#">e</a>	4	498	698	event_related	1 day ago

# Failure modes

Help it doesn't work?!



A cartoon illustration of a dog wearing a hat and sunglasses, sitting at a table in a cafe. The dog is holding a cup. The background is filled with stylized yellow and orange flames, suggesting a fire. There are some grey shapes in the background that look like windows or doors.

# 1. It does nothing

(Well, the blue led blinked?!)

Go to the Hacklab stand to (re-)flash your badge



## 2. It keeps loading

Your batteries are empty



# 3. Can't connect to WiFi

Sorry, the WiFi network at the event isn't as stable as we hoped.

(Also: f\*ck you, asshole with the WiFi pineapple)



# 4. OTA update

Do you see the Disobey logo on your LCD?  
You're already on the latest version, stop trying!

Don't have the disobey logo on the screen?  
You can get your badge flashed at the Hacklab

# 5. It's complicated

Come to us at the Hacklab stand for diagnosis



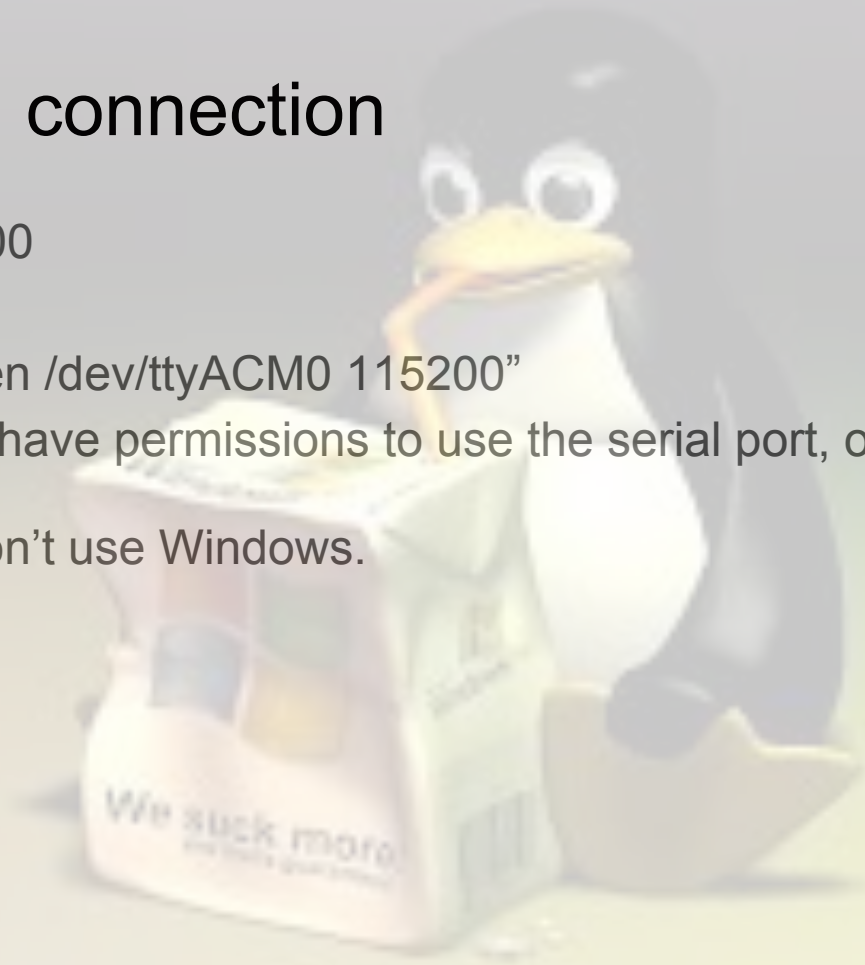
# USB serial connection

Baudrate: 115200

On Linux: “screen /dev/ttyACM0 115200”

(Make sure you have permissions to use the serial port, or be a “sudo” noob.)

On Windows: don't use Windows.



## Disobey - Main menu

```
Apps
Appstore
Settings
About
Python shell
OTA update
Power off
█
```

## Disobey - Settings

```
Change nickname
Configure WiFi
OTA update
< Return to main menu
█
```

```
MicroPython v1.9.1-1415-gcc787c96-dirty on 2019-01-11; SHA2017-Badge with ESP32
Type "help()" for more information.
>>> █
```

## Disobey - WiFi setup

```
Scan for networks
Manual SSID entry
Return to main menu
█
```

Want to test/develop applications? **Use the Python shell**

See the documentation on the MicroPython website.

Hint: ctrl+e enters “paste mode”, then pressing ctrl+d runs the code

ctrl+d while not in paste mode is reset/reboot!

ctrl+c to cancel a running command

To access the menu on a sleeping badge:  
press any button on your badge to wake it up

```
MicroPython v1.9.1-1415-gcc787c96-dirty on 2019-01-11; SHA2017-Badge with ESP32
Type "help()" for more information.
>>>
```

## Useful modules (“import <module>”)

1. badge Main gateway to hardware features of the badge  
badge.led(<led number>, <red 0-255>, <green 0-255>, <blue 0-255>)  
badge.buzzer(<frequency>, <duration in ms or 0 for endless>)  
badge.backlight(<0-255>)

2. ugfx Graphics and input library  
ugfx.clear(ugfx.WHITE)  
ugfx.line(0,0,64,64, ugfx.BLACK)  
ugfx.string(0,0,"Hello", "PermanentMarker22", ugfx.BLACK)  
ugfx.flush()

```
def myCallback(pressed):
    if (pressed):
        print("Button pressed")
    else:
        print("Button released")
ugfx.input_attach(ugfx.JOY_UP, myCallback)
```

JOY\_UP, JOY\_DOWN, JOY\_LEFT, JOY\_RIGHT, BTN\_B, BTN\_START

```
MicroPython v1.9.1-1415-gcc787c96-dirty on 2019-01-11; SHA2017-Badge with ESP32
Type "help()" for more information.
>>>
```

Useful modules (“import <module>”)

1. badge
2. ugfx
3. ir
4. easydraw
5. easywifi
6. ...

> Read the API docs, available on the Hatchery <  
> [https://badge.disobey.fi/firmware/badge\\_API.txt](https://badge.disobey.fi/firmware/badge_API.txt) <