

Programming the Betsy Button

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Prerequisites

To use the Betsy Button Programmer, ensure you have the following:

- An assembled Betsy Button.
- A USB-C cable to connect the microcontroller to your computer.
- A web browser compatible with the Web Serial API (e.g., Google Chrome, Microsoft Edge).

Setup Instructions

Access the Betsy Button Programmer Interface

The programmer interface is a web application.

1. Open your web browser and navigate to <https://woozle.org/betsy/programmer.html>.
2. You should see the “Betsy Button Programmer” interface.

Bootstrap a New Microcontroller (First-Time Setup)

This step installs the MicroPython firmware onto your microcontroller, and only needs to happen once for each microcontroller. If the plugged-in microcontroller has already been bootstrapped, you can skip to the next step.

1. Connect your Betsy Button to your computer using a USB-C cable.
2. Click the “Bootstrap” button on the web interface.
3. A pop-up window will appear asking you to select a serial port. Choose the correct port for your microcontroller and click “Connect.” If you only see one option, that’s probably the correct one.
4. The programming process will begin, and you will see output in the terminal area of the web page. This process downloads the MicroPython firmware and flashes it to the device.
5. Once “Bootstrap complete” is displayed in yellow the terminal, press the physical “R” (Reset) button on your Betsy Button. This tiny button is on the back of the Betsy Button, next to the antenna connection.
6. The web interface will prompt you to click the “Connect” button.

Program the Microcontroller

After bootstrapping, you need to configure the microcontroller with your Wi-Fi network details and a unique identifier for your button group.

1. Click the “Connect” button on the web interface.
2. Select the serial port for your microcontroller again and click “Connect.”
3. You should see “Connected to device” in the terminal area.
4. Fill in the following details on the web interface: Wireless Networks : Enter the SSID (Wi-Fi network name) and Password for up to four Wi-Fi networks. The button will attempt to connect to these in order. At least one network is required. Button Group (identifier) : Enter a unique identifier for your group of buttons. It is recommended to use a phone number in the format xxx-xxx-xxxx (e.g., 555-123-4567). All buttons in the same group must have the same identifier. The application will automatically construct the full URL to the server using this ID.
5. Click the “Program” button.
6. The configuration and MicroPython scripts (`blinker.py` and `main.py`) will be uploaded to the microcontroller. You will see “Uploading” messages in the terminal.
7. Once the programming is complete, the microcontroller will reset and attempt to connect to the configured Wi-Fi network and communicate with the server. It will flash cyan while connecting to the wireless network, then flash red or pulse green, depending on whether a button in this group has been pressed yet.

Completion

Your Betsy Button programming is now complete! You can now use your Betsy Button. Usage information is provided in the separate user instructions.

Project Home

The project home of the Betsy Button is <https://git.woozle.org/neale/betsy-button/>. This site includes all source code, all documentation, an issue (bug) tracker, and more.

I hope the Betsy Button is useful for you, but I cannot provide any support for it. Do not rely on the Betsy Button for health issues.