

User Guide: Flashing Beat Machine Firmware onto ESP32 (macOS)

Follow these steps to install Homebrew, esptool, and flash the Beat Machine firmware onto your ESP32 using macOS Terminal.

Prerequisites

- macOS computer with internet access
- Beat Machine device and USB cable
- Firmware file: Beat_Machine_S3_Code.ino.bin

Steps

1. Install Homebrew: Open Terminal and run the following command: `/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"`
2. Install esptool: Run the command: `brew install esptool`
3. Verify esptool installation: Run the command: `esptool version`
4. Copy the Beat_Machine_S3_Code.ino.bin file to your Mac.
5. Navigate to the folder containing the .bin file: In Terminal, type `cd` followed by dragging the folder into Terminal and press Return.
6. Connect the Beat Machine to your Mac via USB.
7. Find the ESP32 port name: Run `ls /dev/cu*` and look for something like `/dev/cu.usbserial-0001`.
8. Quit Arduino IDE if it is open to free the port.
9. Get the full path to the .bin file: Drag the file into Terminal to display its full path.
10. Flash the firmware: Run the command: `esptool.py --chip esp32s3 --port /dev/cu.YOUR_PORT --baud 460800 write_flash -z 0x10000 /full/path/to/Beat_Machine_S3_Code.ino.bin` (replace `YOUR_PORT` with the actual port name and `/full/path/to/` with the path to your binary)
11. Wait for esptool to finish flashing the firmware.
12. Press Reset on the Beat Machine to restart with the new firmware.

Notes

- Use `esptool.py` for flashing commands.
- macOS uses `/dev/cu.*` for port names.
- If you encounter permissions errors, prepend `sudo` to the command.