



# Installing IronOS on an MHP30 Mini Hot Plate

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<https://learn.adafruit.com/installing-ironos-on-a-mhp30-mini-hotplate>

Last updated on 2024-03-08 04:06:25 PM EST

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# Overview



The MPH30 "Mini Hot Plate Preheater with USB C Power Supply" is a tiny little bench buddy with a big heart ... I mean heater!

While the name suggests it is for pre-heating a PCB, it is very capable of performing solder paste reflow for both assembly and rework. The top surface isn't large - at just 31mm square - which makes it ideal for localized PCB rework and reflow tasks.

If you are a fan of pencil-style solder irons like the TS80P "USB C Powered Adjustable Temperature Soldering Iron" then you may know there is open source firmware called [IronOS \(https://adafruit.it/-C6\)](https://adafruit.it/-C6) for it and many similar soldering irons such as the TS100, TS80, and the Pinecil.

IronOS has a great user interface, easy customization, and a very active developer community led by "Ralim" aka Ben Brown.

It turns out IronOS also supports the MHP30 hot plate!

The installation is very easy and the open source project has great instructions and a user guide. You can jump right in with the GitHub instructions which are covered in this guide with additional photos.

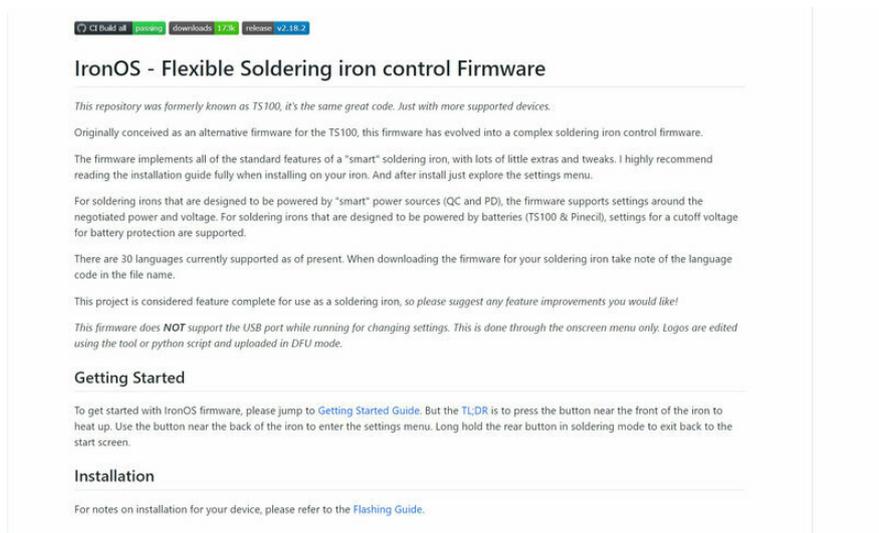


## Mini Hot Plate Preheater with USB C Power Supply

What is this, a camping burner for ants?? Of course not, ants prefer the comfort of B&Bs...From the makers of the luxurious <https://www.adafruit.com/product/4948>

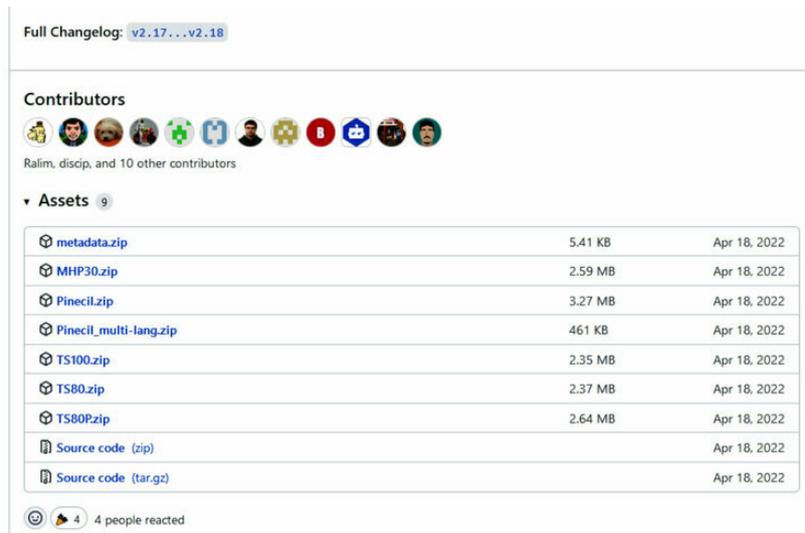
# Downloading IronOS

This guide paraphrases the official [IronOS guide available on GitHub \(https://adafru.it/-C6\)](https://adafru.it/-C6).



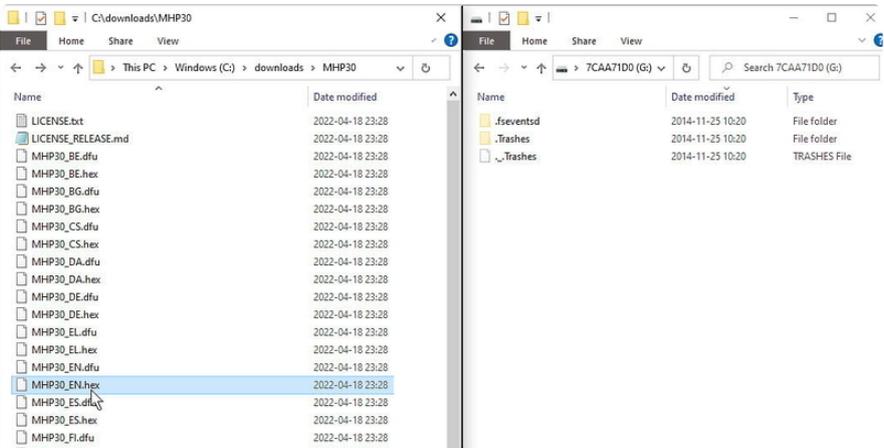
There is a note in the official flashing guide to help with different computer operating systems. The photos in this tutorial are from a Windows computer.

The first step is to download the most recent release of IronOS from GitHub. There is a ZIP file for the MHP30.



There are 30 languages currently supported as of present. When downloading the firmware for your soldering iron, take note of the language code in the file name.

Download and expand the file. The contents include the license and the firmware for each language translation. Find the two-letter identifier for your chosen language. Choose the ".hex" file.



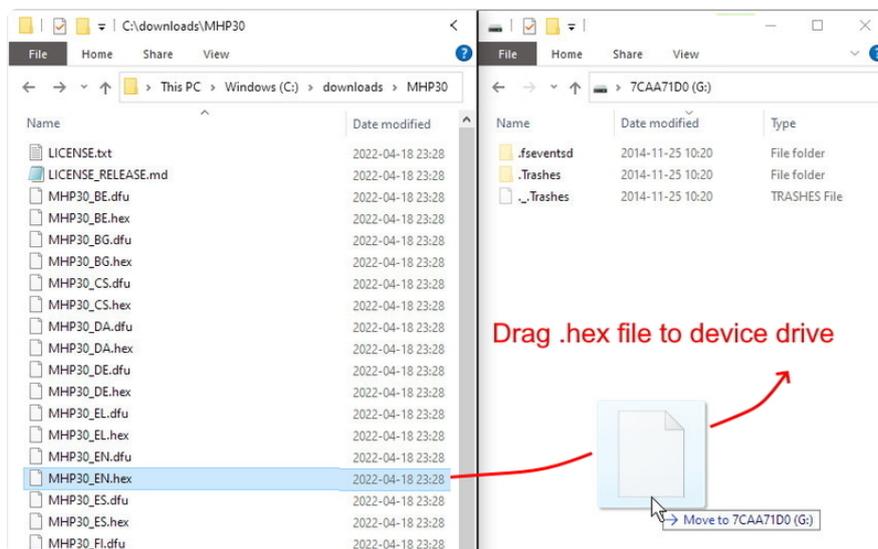
# Installing



The next step is to get the MHP30 into DFU "Device Firmware Update" mode. This is achieved by holding the "A" button on the back while plugging the MHP30 USB into the computer you plan to use to do the programming with.

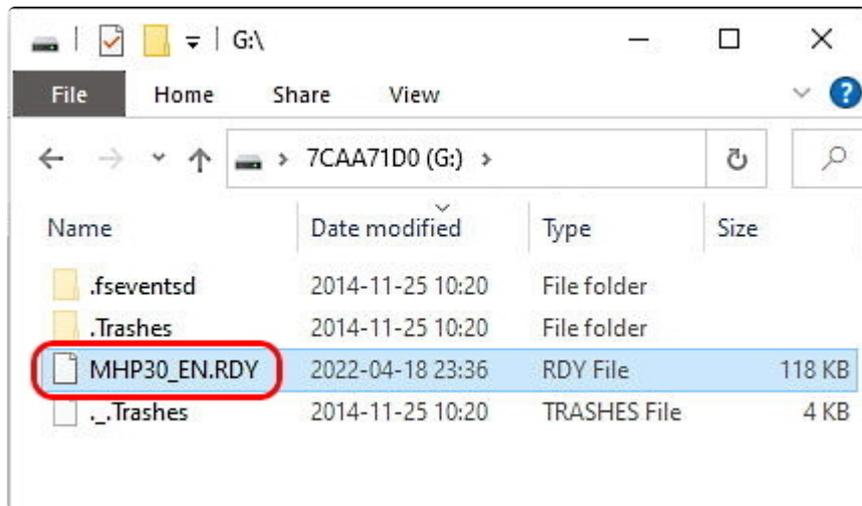
The display will show "DFU" and a number (see image above).

After a moment, the computer should show a small USB storage device.



Now, copy the MHP30 ".hex" file to the small USB storage device. You will see the progress and when it is finished, the MHP30 will reboot, which causes it to disconnect and then reconnect.

You know the firmware was installed correctly if you navigate to the small USB storage device and the file extension has changed from ".hex" to ".RDY".



If you see the extension ".ERR" then the update failed. The first thing to try is to just copy the ".hex" file over again. If it still does not work, then the recommendation is to follow the manufacturer instructions for installing the original firmware.

To exit out of DFU mode, just unplug the MHP30 from the computer and then plug it back into its USB power supply!

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## Use

The firmware implements all of the standard features of a "smart" soldering iron, with lots of little extras and tweaks.

To get started with IronOS firmware, please jump to the official [Getting Started Guide \(https://adafru.it/-C7\)](https://adafru.it/-C7). But the [TL;DR \(https://adafru.it/18fq\)](https://adafru.it/18fq) is to press the A button to heat up. Use the B button to enter the settings menu. Long hold the B button in soldering mode to exit back to the start screen.

## Menu System

This new firmware uses a new menu system to allow access to the settings on the device. When on the main screen and having the unit plugged in, the device shows a pair of prompts for the two most common operations.

- Pressing the A button enters the soldering mode
- Pressing the B button enters the settings menu
- When not in soldering mode, holding down the A button will enter soldering temperature adjust mode (This is the same as the one in the soldering mode, but allows to adjust the temperature before heating up), in soldering mode however this will activate boost mode as long as you hold down the button.

- Holding down the B button will show the [debug menu \(https://adafru.it/-C9\)](https://adafru.it/-C9). In soldering mode this ends the heating.

Operation details are over in the [Menu information. \(https://adafru.it/-Ca\)](https://adafru.it/-Ca)



## Wrap-up

Besides providing control and menus for your hot plate, if you have compatible soldering gear, it provides a common user experience for all of your soldering devices!