

Forum:[Hack Forums](#)

Thread: [Flash Bruce onto an ESP32-C5 \(Step-by-Step Guide\)](#)

Wake - August 26, 2026, 4:22 pm

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Flash Bruce onto an ESP32-C5
(Step-by-Step Guide)

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Written by [Wake](#)

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About this thread

This thread is intended as a quick-start guide to help users get Bruce running on their ESP32-C5 devices. It is a shorter, less detailed tutorial, designed to get you up and running so you can explore the firmware and test its features on your own.

For more in-depth guidance feel free to convo me.

Disclaimer

This thread is for informational and educational purposes only. I will not be responsible for any action performed by any reader.

Introduction

In this tutorial, I will walk you through step-by-step how to flash Bruce firmware onto a ESP32-C5, including all required tools and setup.

What will I need for this?

[+] Chrome browser (Any browser with web serial support)

[+] ESP32-C5 (Waveshare ESP32-C5-WIFI6-KIT-NXRX)

[+] USB C Cable (data cable, not just charging)

[+] Drivers, most OS's will recognise the ESP32-C5 natively, how ever if your computer doesn't detect it you may need the Silicon CP210x driver. You can find the drivers [here](#).

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What is an ESP32-C5?

The ESP32-C5 is an SoC (System on chip) designed by Espressif Systems released April/May

2025. It is part of the popular ESP32 family of microcontrollers, but it has one major upgrade over nearly all the previous models. The C5 is the first chip that supports dual-band 2.4GHz and 5GHz wireless, allowing firmware like Bruce and Hale Hound to interact with modern 5GHz networks, something older ESP32 boards simply can't do.

What is Bruce?

Bruce is an open-source firmware built for ESP32 microcontrollers. Designed for security research and pentesting, it packages a wide range of tools into a single interface. Unlike firmware that requires a physical screen Bruce includes a web navigator, that's what we will be using later in this guide. If you would like more information about Bruce or the features I will leave the [Bruce Wiki here](#).

Devices running Bruce, Hale Hound (and similar firmware) are often nicknamed "budget Flipper Zero" alternatives due to their portability and wide range of features.

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How do I do this?

[+] The first step is making sure you have the correct board. I ran into so many errors and trialed so many boards and the only one that worked for me was the Waveshare ESP32-C5-WIFI6-KIT-NXRX, I found there is a lot of conflicting information online I tried multiple flashers and up to now this is the only C5/web flasher combination that I have got working. Please if you have any different experiences I am happy to troubleshoot them with you or if you have successfully flashed a different C5 board post your board and flasher you used, that way we can build a working compatibility list.

[+] Now we have figured out what board to use flashing it couldn't be easier, head over to the [Bruce web flasher here](#).

[+] Plug your USB C Cable into your machine and while plugging it into your ESP32-C5 hold the boot button on the right hand side while plugging into the USB on the left, once you have plugged it in release the boot button. Holding the boot button while plugging in our board puts it into boot loader mode, this allows us to flash new firmware onto it.

[+] Now on the Bruce flasher page for this guide we will be using the Latest 1.16.1 firmware select that, now we need to select our device manufacturer for this guide ours is ESP32, now select our device ESP32-C5.

[+] Once all our selections are ready we need to connect to our ESP32-C5, click "connect to device" and a browser pop up will appear, select your ESP32-C5 from the list if you are unsure what device is the correct one with the list open unplug the device hold boot and plug it back in and you will see it reappear back in the list.

[+] Now we are connected we have 2 options "Install esp32-c5" or "Logs & Console" press "Install esp32-c5" next select Erase device and click next. Selecting Erase device will eliminate most bugs we may bump into.

[+] Now click Install and wait a few minutes for the board to be erased and flashed, once the board has finished you will get the message "Installation complete!" unplug your board and plug it back in.

[+] Next we will head over to [the bruce web navigator](#), on this page we need to connect to our board the same way we did before while flashing it.

[+] Go ahead and find your board and connect, you will know instantly if the flash has worked, your board will now have a constant blue LED. Once connected you have some options at the bottom Update, Factory Reset, Reboot, Navigator, click navigator, now we have full control of our ESP32-C5 and the Bruce GUI from our browser.

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Finished Result

If everything was done correctly, you now have a fully functional ESP32-C5 Bruce device ready for testing and exploration.

If you run into any issues, feel free to reply and I'll help out.

[Thank you for taking the time to read this thread. If you enjoyed this please check out the rest of my tutorials and write-ups](#)

Stanley - August 27, 2026, 9:33 am

I'm Stanley HF's helper bot. The OP (original poster) of this thread wants everyone to see this page and has elected to bump it to the top of the showthread listing. Since HF doesn't want a ton of LQP (Low Quality Posts) this is the best method of bumping your content. There is a small ?yte fee for each bump. Any OP can bump any of their threads on HF from the linked icon on the top of their first post.

If you haven't already read the first post of this thread we encourage you to do so.

Thanks,
Stanley