Get Started With PocketC.H.I.P.

What is PocketC.H.I.P.?

Simply put, PocketC.H.I.P. is a small computer. It has all the parts of a computer like a screen (touchscreen!), keyboard and USB port to connect a mouse to. What makes PocketC.H.I.P. unique from other computers is not only its size but the fact it was created to be hacked and used as an educational tool.
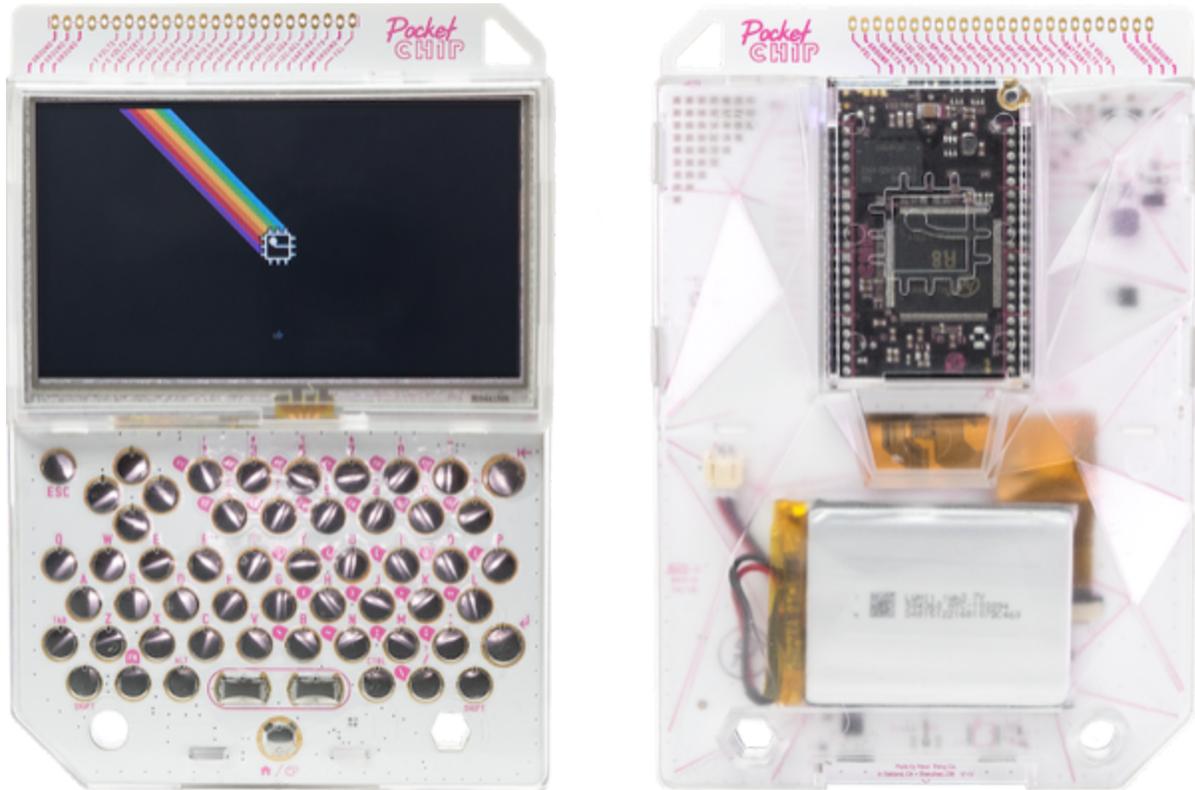
A popular way to teach with PocketC.H.I.P. is for students to learn basic programming and game design principles while playing them in the fantasy console Pico-8. They can hack existing video games or create their very own game from scratch.

PocketC.H.I.P. has a lot more to offer since it's powered by C.H.I.P., the world's first $9 computer. Some other things students can learn are how to use a command-line interface using the Terminal app to create and organize files and directories. Sensors and LEDs can be connected to PocketC.H.I.P.'s GPIOs and programmed using the Python language to gather data and actuate.

Just like any computer PocketC.H.I.P. has specs which are defined by the fact it runs on C.H.I.P..

Processor	ARM Cortex-A8 32-bit
Architecture	ARMv7-A
GPU	Mali 400 (400MHz)
RAM	512 MB
Storage	4 GB NAND Flash
Network	WiFi 802.11n / Bluetooth 4.0
GPIO	53

In this guide you will be introduced to the basic functionalities of PocketC.H.I.P. and be introduced to the applications it comes with out of the box.

Power

Turn On

Turn on PocketC.H.I.P. by pressing down the Home/Power button located at the bottom in the middle of the keyboard for about two seconds.
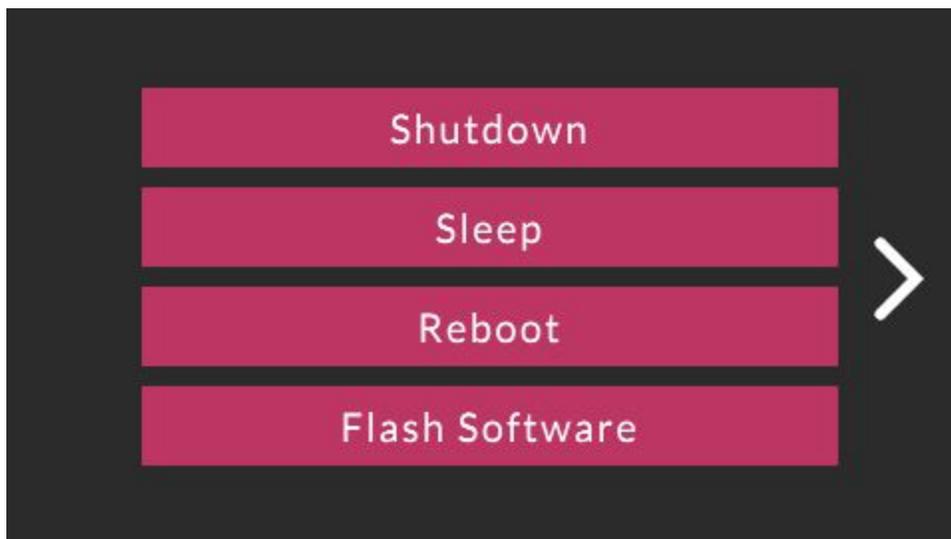
Sleep

Once PocketC.H.I.P. is powered on it can be put in sleep mode and powered down safely by tapping on the power icon in the lower left corner of the home screen and choosing an option from the power menu.

Power icon:

Power Menu:

Sleep is a low-power state that saves battery, and also saves you time, since it's faster for PocketC.H.I.P. to wake from sleep than to boot from a powered-off state.

PocketC.H.I.P. is designed to turn off the screen and backlight after a few minutes without any user interaction. To wake up PocketC.H.I.P. from sleep state, simply touch the screen or press a key.

Shutdown

Shutdown PocketC.H.I.P. by pressing the power icon in the bottom left corner of the home screen and tapping **"Shutdown"** .
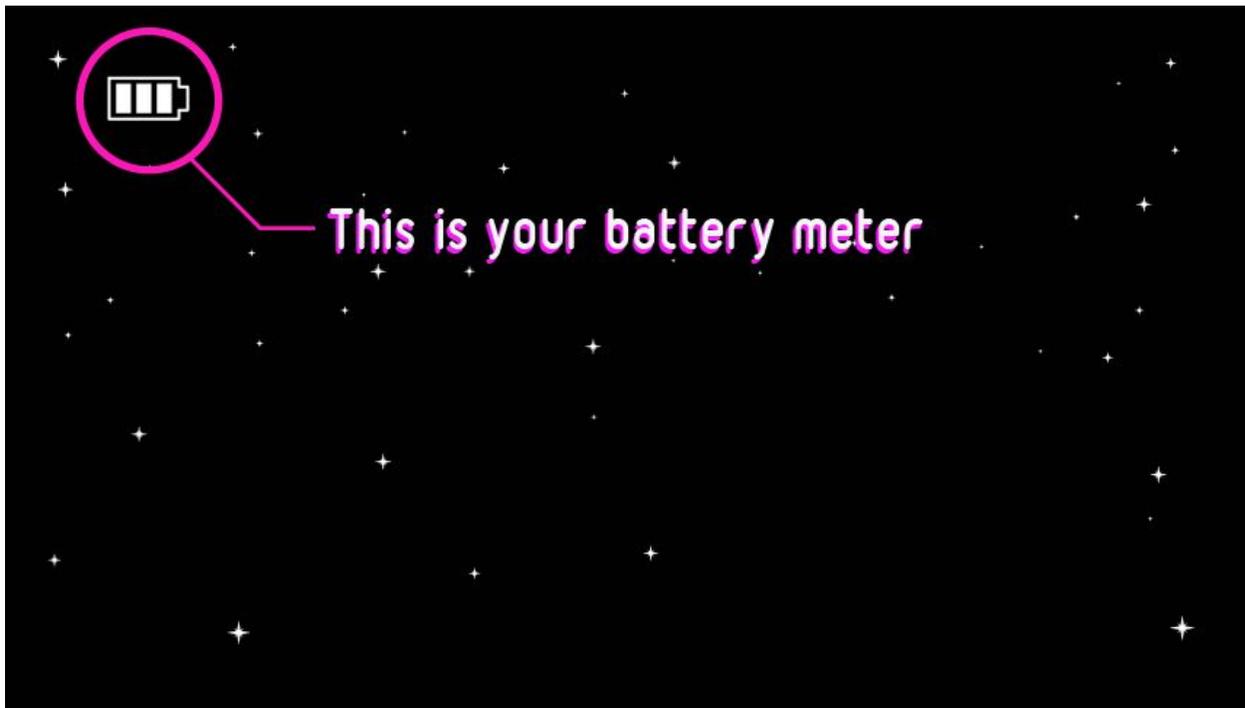
If PocketC.H.I.P. becomes unresponsive, hold down the Home/Power button for eight seconds. This cuts battery power to PocketC.H.I.P. and shuts it off. Only use this method if all other methods do not work.

Battery Life

PocketC.H.I.P. lasts for about 5 hours of use with a fully charged battery.

How to preserve battery life:
- Dim screen brightness
- Turn off WiFi
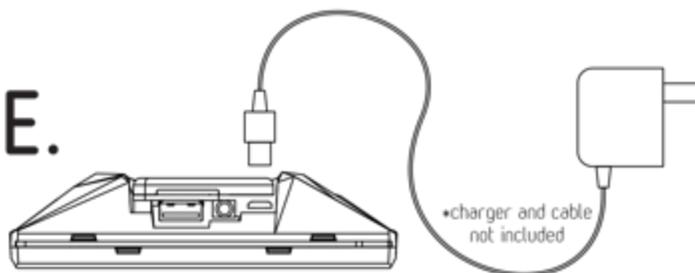
This is your battery meter

Charging

Plug PocketC.H.I.P. into a 5-volt 1.5 Amp power supply with a USB-micro cable to charge the 3.7V battery. PocketC.H.I.P. is compatible with most cell phone chargers that use a USB-micro cable.

PLUG IN
TO CHARGE.

Charge through C.H.I.P.'s
micro USB port.

•charger and cable
not included

Setup WiFi

A WiFi connection isn't necessary for PocketCHIP to operate. It's useful when updating and installing software packages and for exploring community made games while using the Pico-8 application.

To connect to a WiFi network tap the settings icon to access the Settings screen.
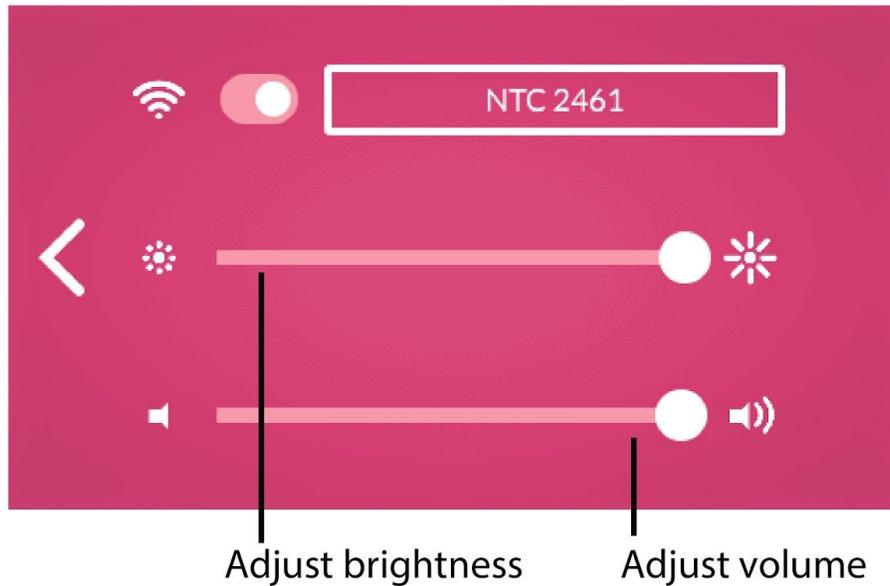
Press the button to the right of the WiFi toggle switch to open a menu of all the networks in range.

Scroll through the list and select your network by pressing the arrows above and below the network names. To refresh the network list, just exit the list and enter again. When prompted, enter the network password in the text field, then touch the **Connect** button. It may take a few seconds to connect.

Adjust Brightness and Volume

Adjust the screen's brightness and the volume level of the headphone output by dragging the sliders on the **Settings** screen. Drag right to increase brightness and volume.

Adjust brightness   Adjust volume

Flash Software

PocketC.H.I.P. already comes flashed with the latest software out of the box and is ready to go.

You do not need to flash PocketC.H.I.P. unless you want to roll back to a previous version of the operating system or if you find C.H.I.P. frozen and inoperable. To flash PocketC.H.I.P., take C.H.I.P. out and flash it independently. To flash it with the latest factory image follow the Flash **C.H.I.P. With an OS** instructions on the [C.H.I.P. doc page](#).

WARNING: Flashing will permanently **delete all the data** on PocketC.H.I.P., so backup anything you want to keep before doing so.

Display

Size: 4.3"
Resolution: 480 x 272
Type: resistive touch

To easily navigate the touch screen the eraser of a pencil or a commercial stylus comes in handy rather than using your finger. In the classroom the pencil becomes particularly useful and it doubles as a stand!
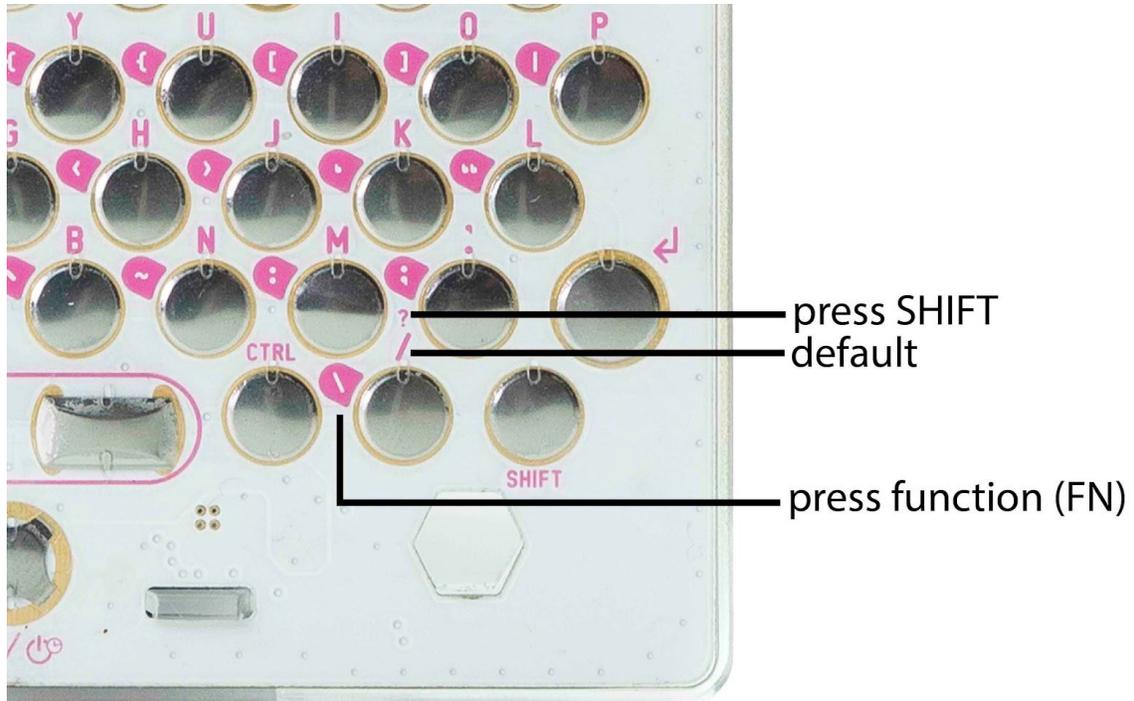
Supported actions:
- **Tap once** to open apps, press buttons, and close windows.
- **Press and slide** to scroll, adjust sliders, and resize windows.

Keyboard

PocketC.H.I.P. has a full QWERTY keyboard and a D-pad for gaming.

Many keys have multiple functions which are printed on the keyboard. Here is how to access each character:

- **Top character** - Press Shift + [key]
- **Bottom character** - Default character
- **White text on pink** - Press **FN** (function) + [key]

Helpful keyboard shortcuts:

- **CTRL + TAB** - Scroll through application windows when multiple are open.
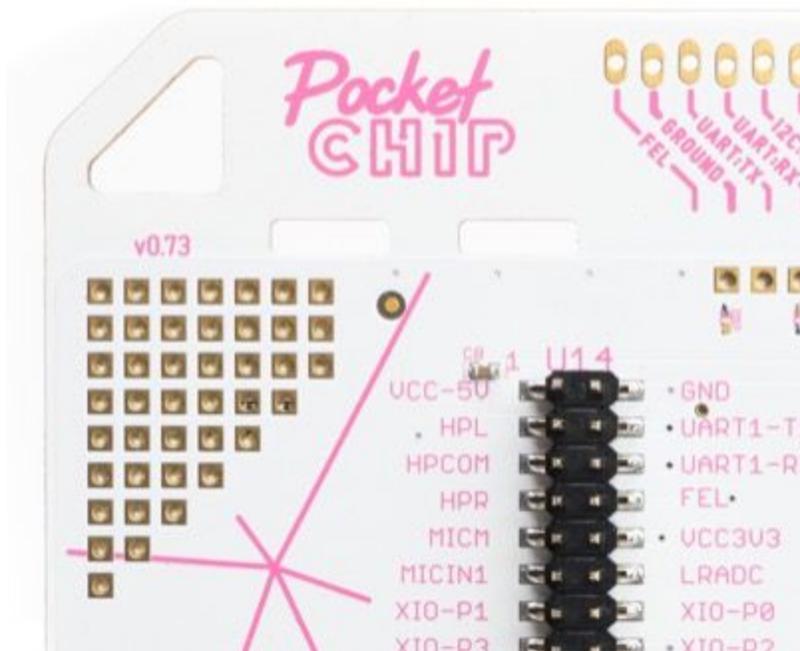- **CTRL + Q** - Quit an application

Removable Enclosure

PocketC.H.I.P. is designed to be easily taken apart since there are no screws used in the assembly.

If you want to fully disassemble PocketC.H.I.P., first (carefully) remove C.H.I.P. from the back of PocketC.H.I.P.. Then flip PocketC.H.I.P. around and remove the frame (technically known as a bezel) around the perimeter of the screen. Remove the back case of PocketC.H.I.P. by pressing the tabs above the screen and on either side of the Home/Power button.

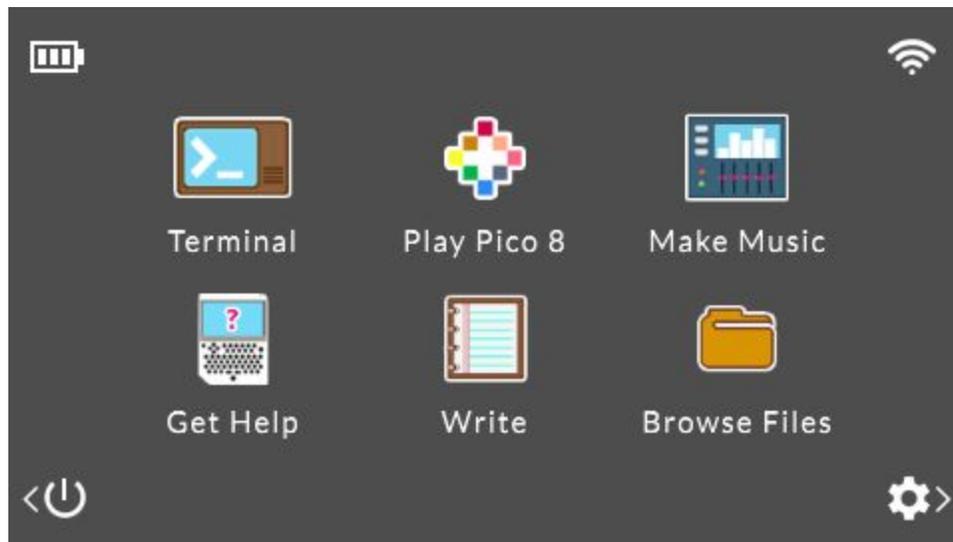While the case is open, check out the "secret" prototyping area and GPIO solder pads inside the enclosure!

Pencil/Pen Stand

Give your hands a break! PocketC.H.I.P. can be propped up on a table with a pencil or pen. The eraser end of a pencil is also a handy stylus for the touch screen.

Applications

PocketC.H.I.P. comes with six applications on the **Home Screen**.

- **PICO-8** - play, create, share 8-bit games
- **SUNVOX** - listen or compose electronic music
- **Terminal** - use a Linux shell to run commands
- **Write** - a lightweight text editor
- **File Browser** - a graphical file browser
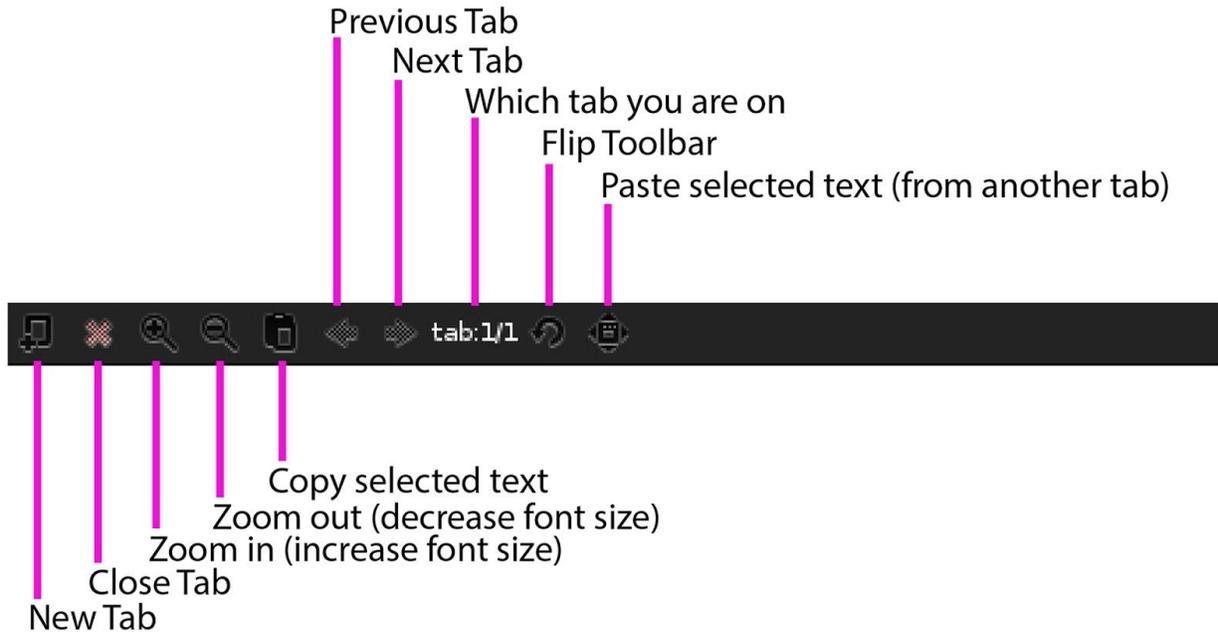- **Help** - the same as the online documentation, built into PocketC.H.I.P.

Terminal

Terminal is a place to type commands directly to the computer for execution and evaluation by the operating system. There are no icons, just text.

Terminal on PocketC.H.I.P. can be an excellent tool to teach students about the power of a computer's command-line interface.

Use the terminal to dive into the operating system's guts, quickly move files around, play with PocketC.H.I.P.'s GPIO, or download software. To learn more, check out the primer on using Terminal in the C.H.I.P. documentation.

Terminal toolbar:

Previous Tab
Next Tab
Which tab you are on
Flip Toolbar
Paste selected text (from another tab)

tab:1/1

Copy selected text
Zoom out (decrease font size)
Zoom in (increase font size)
Close Tab
New Tab

PICO-8

Play games, change games, and make games with PICO-8! With a couple of keystrokes you can join the PICO-8 community and modify their games, or even make your own! This application is very popular in an educational setting. Students learn how to program while hacking existing games and creating their own.

SunVox

The **SunVox tracker** is a fully featured music production studio. It's lightweight, sounds great, and is designed to work with a stylus on a single, small screen. As a result, it's a perfect fit for

for making music and playing with sound on PocketC.H.I.P.. Learn more about how to use SunVox by tapping the Help icon or by going to [PocketC.H.I.P.'s online documentation](#).

Help

Tapping this icon will take you to the full Help document which is the same as the [PocketC.H.I.P. doc page found online](#).

Write

Write is a minimalist text editor that's well suited for basic text entry tasks. If you're looking to scribe code with Write, you'll be pleased to learn that it supports line numbering and auto indentation, just look under the "Option" menu.

File Browser

The File Browser provides a visual representation of the files on PocketC.H.I.P. using icons. Drag, drop, and double-click your way through this application for full control over every file on your device.

PocketC.H.I.P. Resources

[PocketC.H.I.P. Online Docs](#)