

Quick Guide - OSP Hardware (Windows)

For macOS/Linux installation, see the other [Quick Guide](#).

Table of Contents

1 - Requirements	2
2 - Installation Steps	5
3 - Next Steps and Resources	12

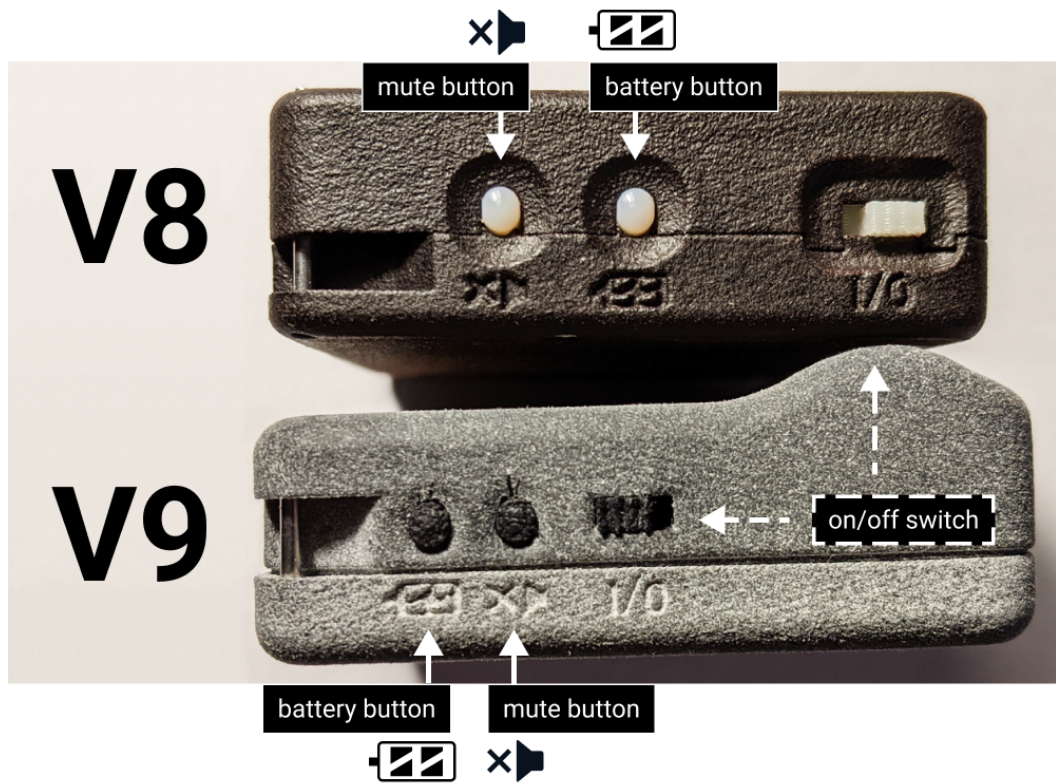
Disclaimer - Device Overheating Issue

While the device is plugged in with a USB cable(s) and operating at the same time for a prolonged period of time, the device will eventually overheat, which can reduce its audio quality and performance. The OSP team is working to resolve this.

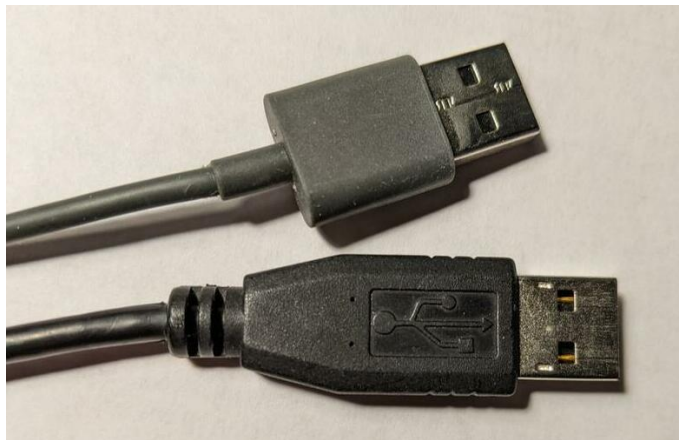
For now, it is recommended to set up a SSH connection so that you don't have to use a cable to connect and operate the Processing and Communication Device (PCD) to your computer for long periods of time.

1 - Requirements

- Windows computer with 2+ GB of storage space.
- Knowledge of how to navigate and use a terminal (such as Microsoft Powershell), Windows' Settings, File Explorer, Device Manager, and a browser (like Chrome).
- One Processing and Communication Device (PCD)
 - *V8 version* - Has two micro-usb ports labeled "UART" and "ADB"
 - *V9 version* - Has a single micro-usb port.
 - **The PCD may need to be charged for at least a few hours before, otherwise it will not function properly during installation. For V8 versions, charge using the ADB port.**



- Micro-usb cable(s) that **can exchange data, not charge-only**
 - 2 cables for the V8 version, 1 cable for the V9 version



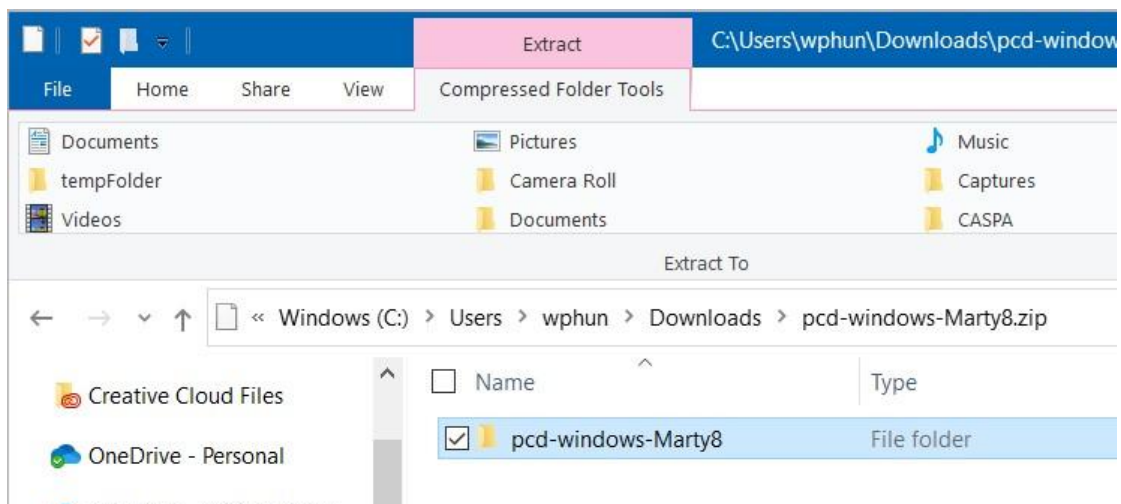
- Behind-the-Ear, Receivers-in-the-Canal (BTE-RICs)



2 - Installation Steps

Refer to “4 - Installation Steps Part 1 (Windows)” of the ["Manual - OSP Hardware"](#) if any of the steps are confusing.

1. Go to this [link to the "Binaries" folder on GitHub](#).
2. Select the link labeled “pcd-windows-2021A.zip” and download the .zip file.
3. Save it to a convenient location on your computer, such as “Downloads” or “Desktop”.
4. Go to File Explorer, find the .zip file, and double-click to extract the contents of the zip file. When asked which application to open this file, choose “File Explorer”. You should see a folder with the corresponding name.



5. Select “Extract All” and you will see a prompt that asks you to choose where to save the resulting folder (you can try saving to “Downloads”). Select “Extract” from the prompt, and wait a few minutes for the extracting process to finish. You should see the location of the resulting folder.
6. Locate and double-click the folder that you just created. Then, go to the subfolder named “win”, and double-click on a file named “CDM21228_Setup.exe” to open it.
7. You should see a window called “User Account Control” that asks you “Do you want to allow this app to make changes to your PC?”. Click “Yes” to continue and start the FTDI CDM installer instructions window.
8. Follow the instructions from the Device Driver Installation Wizard. Accept their license agreement to complete the installation.
9. Attach the micro-USB cable(s) to the ports on the device.
 - a. *V8 version* - Attach one to the “ADB” port, the other to your computer’s USB hub.
 - b. *V9 version* - Attach one cable from the device to your computer’s USB hub.
10. Take each of your BTE-RICs and put them in the ports labeled “left” and “right”.
11. Turn on the device in Boot mode (you will not see lights, which is expected).

- a. *V8 Version* - While pressing and holding down the *battery button*, flick the on/off switch **towards the battery button**.
 - b. *V9 Version* - While pressing and holding down the *mute button*, flick the on/off switch **towards the mute button**.
12. In your Windows taskbar, use the Search box to find Device Manager and open it.
13. In Device Manager, first find “*FT4222H Mode 3 Device*” and “*USB Serial Converter*”: both are under “*Universal Serial Bus Controllers*”.
 - a. Click on “*USB Serial Converter*” and a window should appear describing the Converter’s properties.
 - b. Go to “*Advanced*” and verify that “*Load VCP*” is checkmarked (if not, click on the check box to do so).
14. In Device Manager, find “*Android*”: This should appear under “*Other devices*”. You may need to restart your PCD in boot mode a few times to see this.
 - a. Click on “*Android*”, and you'll see a window that describes its properties, then select “*Update Driver...*”.
 - b. Select “*Search automatically for drivers*”.
 - c. Select “*Search for updated drivers on Windows Update*”.
15. You’ll see the Windows Settings window appear, showing “*Windows Update*”. Select “*View optional updates*”.
16. Go to “*Driver Updates*” and find “*Google Inc - Other hardware - Android Bootloader Interface*”. Click on the box next to “*Google*

Inc...Bootloader Interface” to select it, then select the “*Download and install*” button.

a. **Troubleshooting:** If “*Google Inc...Bootloader Interface*” doesn’t immediately show up, go back to “*Windows Updates*”, click on the “*Check for updates*” button, wait a few seconds, then repeat the following: “*View optional updates*” > “*Driver Updates*”.

17. Go back to Device Manager and find the “*Android Bootloader Interface*” under “*Kedacom USB Device*”. At this point, you are now ready to connect to the PCD.

18. Go back to the Search box in the Windows taskbar, and start typing “*Microsoft Powershell*” to open the program.

19. In Powershell, navigate to the “pcd-windows-[NAME]” folder:

```
cd [PATH_TO_“pcd-windows-[NAME]”_FOLDER]
```

For example, if you have extracted a .zip file named

“pcd-windows-18May21”, you will see a folder named

“pcd-windows-18May21”. If that folder was saved within

“Downloads”, you would enter: **cd**

```
.\Downloads\pcd-windows-18May21\pcd-windows-18May  
21
```

20. Check that you see the “*pcdtool.exe*” file and relevant files by entering the command: **ls**

21. Enter the terminal command `.\pcdtool.exe flash` to flash the device. If prompted, enter the password used to login to your computer.
22. If your password was successful, wait for the rootfs processes to complete and for the device to restart itself (you should see LED lights blinking).
23. In the terminal, connect to the device: `.\pcdtool.exe conn`
24. Press the "Enter" key once or twice for terminal feedback. You'll see `root@ospboard:~>` and you'll be able to type freely.
25. The device has two different modes for wifi connectivity; default for the device is "Hotspot mode", the other is "NetworkManager mode". Follow one of these series of steps based on which mode you choose:
 - a. **"Hotspot mode"** uses the PCD as a wifi hotspot instead of an external internet connection. To start OSP in this mode:
 - i. Find the wifi hotspot name "ospboard" under your computer's available wifi networks and entering the password "hearingaid".
 - b. **"NetworkManager mode"** uses an external internet connection to run the OSP software: `set_mode nm`
 - i. Your device will restart itself, so wait a few moments until the terminal messages stop and you see the text "OSP

VERSION”. If this doesn’t happen, try manually switching the device on and off.

- ii. Check that you are in NetworkManager mode:

print_mode

You should see a list of available Wifi hotspot names, under “SSID”.

- iii. Connect the device to your desired Wifi hotspot:

nmcli dev wifi con “SSID/HOTSPOT NAME”

password “SSID/HOTSPOT PASSWORD”

In the terminal, this command would execute successfully if a message similar to this appears: “*Device ‘wlan0’ successfully activated...*”.

- c. Enter this command to finalize wifi connectivity:

ssh -i ospboard_id root@ospboard.local

If this command doesn’t work, try:

ssh -i ospboard_id root@ospboard.lan

- d. When asked to confirm connectivity, enter: **yes**

26. Open a web browser (Google Chrome, Firefox, etc.).

27. Enter one of the following into the search bar:

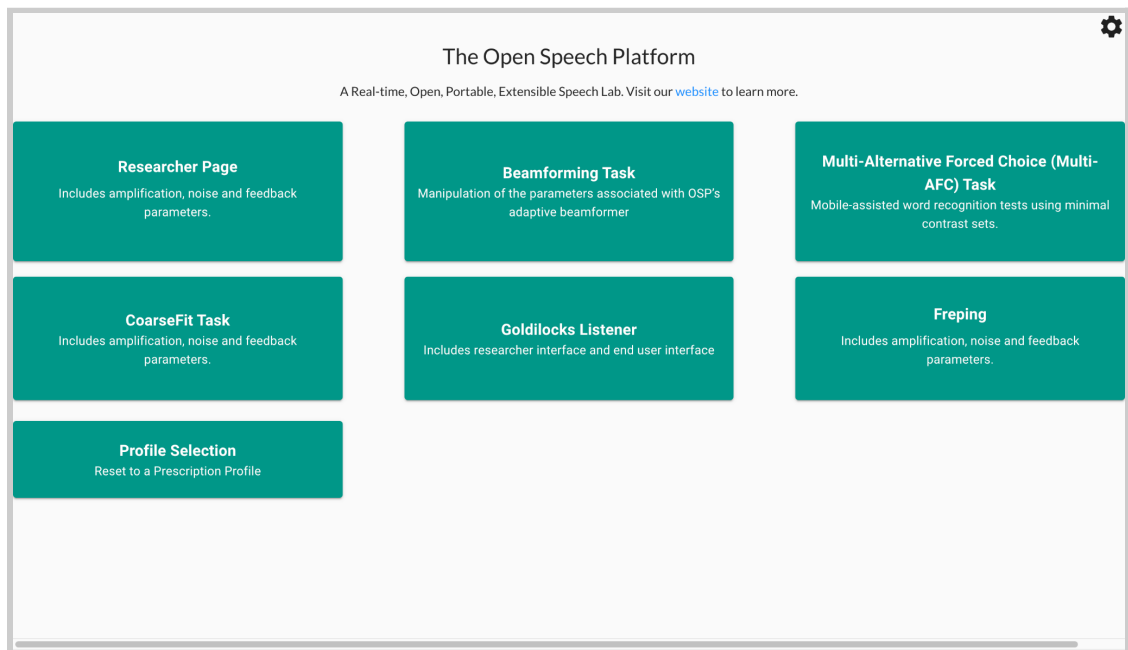
http://ospboard.lan:5000 (try this first) or

http://ospboard.local:5000

If neither of them work, you can try using the IP address found

from the **ifconfig** command. For example, if your IP address is “192.168.8.1”, you would enter “**http://192.168.8.1:5000**”.

You’ll see the landing page like the image below.

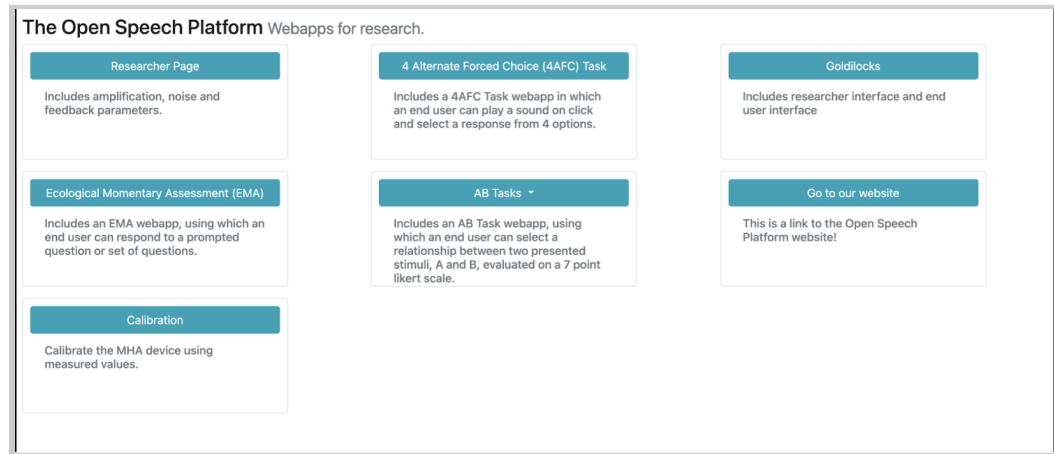


Optionally, you can access the legacy version of OSP software by simply entering one of the following into the search bar:

- **http://ospboard.lan** (try this first)
- **http://ospboard.local**
- **http://[YOUR_IP_ADDRESS]**

Your IP address can be found from the **ifconfig** command. For example, if your IP address is “192.168.8.1”, you would enter “**http://192.168.8.1**”.

You'll see the landing page like the image below.



3 - Next Steps and Resources

At this point, your PCD should be ready to go.

You should refer to section 6 of this [Getting Started Guide](#) to verify that components of the OSP hardware and software function as intended.

To learn more about the PCD's full capabilities or to troubleshoot any of these steps, refer to the [OSP Hardware Manual](#). Sanity checks for OSP can also be found here.

To take advantage of the device's software features over the browser, refer to the [OSP Software Manual](#).

Below are hyperlinks to other OSP-related resources:

- [OSP Website](#) - General information of OSP.
- [OpenSpeechPlatform on GitHub](#) - This is a public repository where you will find installer files and other documentation files for setting up both OSP software and hardware. Check back for future OSP release notes, updated installer files, and other updates.
 - [“Binaries” folder on GitHub](#) - This is the specific folder where you can download the software builds for either macOS or for the OSP hardware provided.
- [Google Form “OSP Feedback Form”](#) - You can complete this form if you would like to follow up regarding any topics or issues using OSP to a project staff member.