**TURN PI MICROSCOPE INTO USB CAMERA**

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Showmeweb is a Pi SD image containing a minimal Linux operating system to run the Pi and application that turns the Pi into a USB-compatible Web Camera (USB video class (UVC) driver supports cameras that capture the scene in YUV format and transmit the pixel data over USB).

The image is tiny (<25 MB) so it downloads, programs and boots-up really fast. All you need is a USB data cable plugged into the middle USB connector on the Pi and connect it to your PC/Mac and the Pi will appear as a USB Web Camera, so you can use any web-camera application to view and record video, including Zoom, and save video and photographs. There is also a simple menu controlled over a terminal (e.g., PuTTY) to adjust camera settings.

INSTALLATION

Read this web site that demonstrates the installation of showmeweb. https://tutorial.cytron.io/2020/12/29/raspberry-pi-zero-usb-webcam/

1. Download showmeweb to your PC/Mac. Select the version based on the Pi you are using (e.g., Pi Zero with or without WiFi). https://github.com/showmewebcam/showmewebcam

2. Program image into SD card.

3. Use a data USB cable (provides power and data) to plug the microscope into your PC/Mac using the middle USB connector on the Pi Zero. Launch any application that can view video and take photographs from a USB camera.

4. To change camera settings download PuTTY (https://www.putty.org/), an SSH and telnet client for Windows. Mac OS X includes a command-line SSH client as part of the operating system. To use it, goto Finder, and selext Go Utilities from the top menu. Then look for Terminal.

Under the “Session” category, select the “Connection type” as Serial. Enter the COM port number in the Serial line and set the Speed (baud rate) to 112800.

Once you see a black screen with # type "login". For PuTTY, there is no line feed so after pressing Enter, use Control + J to generate a line feed (see https://z49x2vmq.github.io/2017/11/12/putty-cr-lf-en/). Then do the same technique to enter the password root. Or you can configure PuTTY, under “Terminal” select “Implicit CR in every LF”.

Once logged in, change directory to bin (cd bin) then launch camera-ctl, by entering the following

cd bin

camera-ctl

You should be able to see a user interface. Navigate around it by pressing the arrow keys and play with the settings. You can always reset them to default by pressing “R”.



