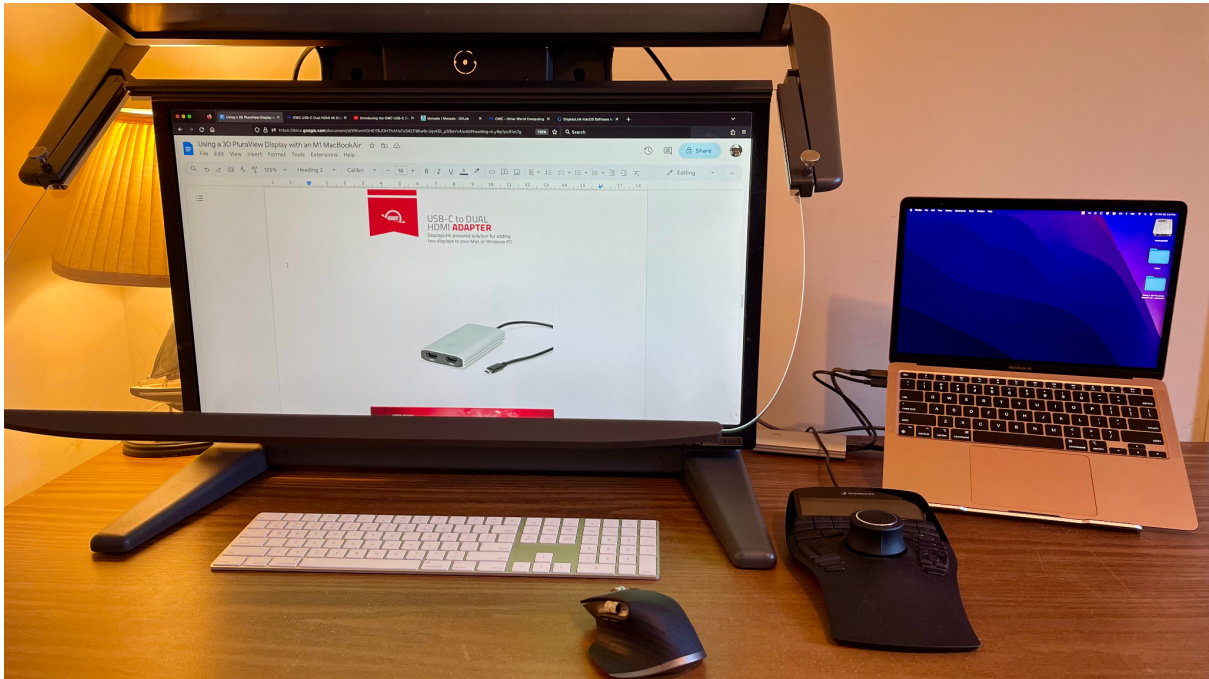


Using a 3D PluraView Display with an M1 MacBookAir

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Overview

I am excited to mention that I'm now working on getting the [Schneider Digital 3D PluraView](#) display and the [OpenDisplayXR toolset](#) working on macOS ARM64 based computers. This comes as a followup to my earlier Windows and Linux efforts that got [Monado](#) working in extended desktop mode via the OpenXR simulator's remote and qwerty interfaces.

I have two Apple M1 [MacBookAir](#) (2020) laptops in my home office. When I first got the M1 MacBookAir systems I was told by Apple that the laptop could only ever support a single external display when running with a Thunderbolt dock. This monitor limitation made it harder (impossible) to use my traditional preferred setup of a dual monitor suite for video editing and other post-production tasks.

This week I came across a really interesting USB-C based 3840x2160 px resolution dual HDMI video output hardware device from a company called [OWC](#) (Other World Computing):

"[OWC USB-C Dual HDMI 4K Display Adapter with DisplayLink](#) for Apple silicon M1 & M2 Macs or other Macs or PCs with USB-C or Thunderbolt"

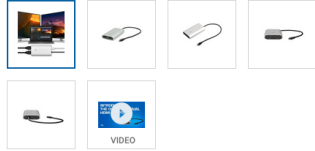
The video adapter has a retail price of \$119 USD. I liked the hardware specs so much I bought two of them. 😊

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OWC USB-C Dual HDMI 4K Display Adapter with DisplayLink

for Apple silicon M1 & M2 Macs or other Macs or PCs with USB-C or Thunderbolt

Mfr P/N: CADDPL2HDMI OWC SKU: OWCCADPDL2HDMI



Highlights

- **Solution:** easily solves the one external display limitation of Apple silicon M1 and M2 Macs
- **Expansive:** connect two HDMI displays up to 4K to a single Thunderbolt or USB-C port on any Mac or Windows PC computer for up to four total external displays¹
- **Flexible:** choose either Extended or Mirror display modes
- **Convenient:** bus powered via integrated 13-inch USB-C cable for use anywhere
- **Comprehensive:** certified pass-through power delivery so you can fully power/charge your Apple silicon M1 or M2 MacBook Pro or MacBook Air and run dual displays all through a single port²
- **Portable:** about the size and weight of a compact smartphone
- **Complete:** one easy, affordable solution vs costly hassle of multiple adapters and cables
- **HDMI Pass Through Support:** Allows audio signals to pass through the adapter to the connected displays
- 1 Year OWC Limited Warranty

★★★★★ Reviews (22)

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Hello Dual-Displays.
Now on your M1 and M2 Mac.
 Oh and BTW... it works with USB-C and Thunderbolt Macs & PCs too 😊

Resolution

- Single and dual displays up to 4K @ 60Hz (3840 x 2160)

Refresh Rate

- 60Hz

Display Support

- Up to two 4K displays @ 60Hz

Display Support by Port

- HDMI 2.0: Up to 4K @ 60Hz

Chipset

- DL-6950

Mac OS Compatibility

- macOS 10.15 Catalina
- macOS 11.x Big Sur
- macOS 12.x Monterey
- macOS 13.x Ventura
- macOS 14.x Sonoma

PC OS Compatibility

- Windows 11
- Windows 10 32-bit Edition
- Windows 10 64-bit Edition
- Windows 7 64-bit Edition
- Windows 8.1 64-bit Edition
- Windows 8.1 32-bit Edition
- Windows 7 32-bit Edition

Mobile OS Compatibility

- Android 10.x
- Android 11.x
- Android 12.x
- Android 13.x

Other OS Compatibility

- Chrome OS
- Ubuntu 20.04 or later

Other Requirements

- Any Mac, PC, Chromebook, tablet, or phone with a USB-C or Thunderbolt (USB-C) port
- DisplayLink Manager application is required in MacOS 11 and later to properly configure attached displays for use. For Windows, you will need the DisplayLink driver. Both items can be downloaded [here](#).
- Graphics Connectivity Version 1.8 or later required for macOS Ventura support.

Power Supply

- Bus-powered

Housing Color

- Silver

Housing Material

- Aluminum with plastic end-caps.

Color

- Silver/Black

Dimensions

- Height: 2.0 cm (0.8 in)
- Length: 11.5 cm (4.5 in)
- Width: 6.2 cm (2.4 in)

Cable Length

- 26.00 cm (10.2 in.)

Weight

- 144.0 g (0.32 lbs)

Input Connection

- USB-C

Output Connection

- (2) HDMI
- HDMI pass through is supported allowing audio signals to pass through the adapter to the connected displays.

Certifications

- CE
- FCC

Reach Certification

- Yes

Ambient Temperature

- Operating: 32°F to 104°F (0°C to 40°C)

There is a YouTube video that introduces the hardware device:



The OWC Dual HDMI Adapter arrived today and I had a chance to set it up for the first time. The unit is a small external device that has two HDMI video outputs, a USB-C power passthrough port, and a USB-C cable that connects to the host system. The hardware adapter enables DisplayLink support using a video driver chipset by Synaptics (<https://www.synaptics.com/products/displaylink-graphics>).

This is what the product packaging looks like:





On the hardware side of things it only takes a few minutes to hook up the cables.

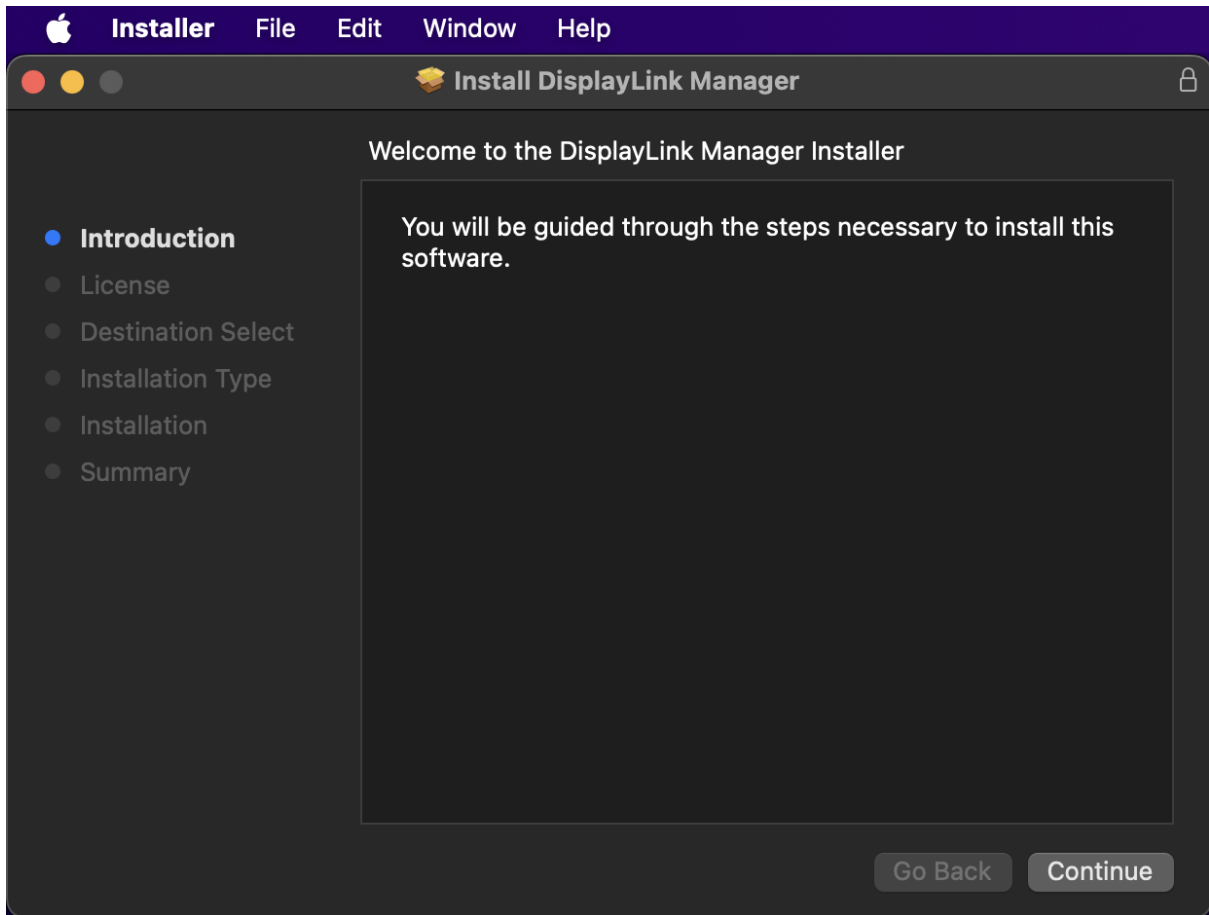


On the OWC website there is a [user guide](#) in PDF format that explains the set up procedures.

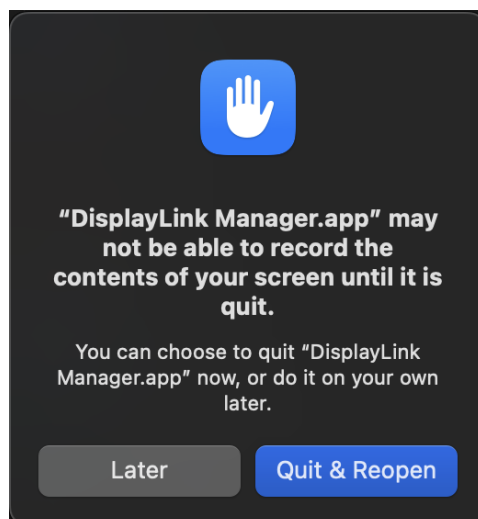


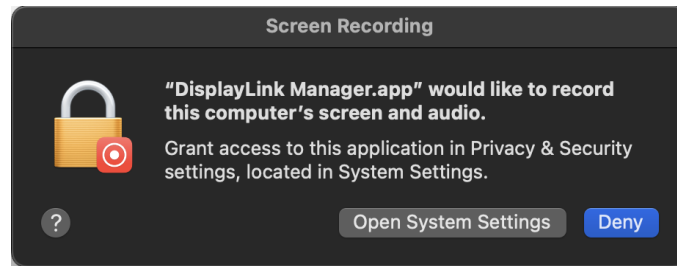
To get this hardware working on macOS you start by downloading the [macOS DisplayLink drivers](#) from the [Synaptics site](#). I'm running macOS 14 Sonoma on my MacBookAir and had no issues getting the drivers going.

I installed the Synaptics "DisplayLink Manager Graphics Connectivity 1.9" and "macOS App LoginExtension" packages.

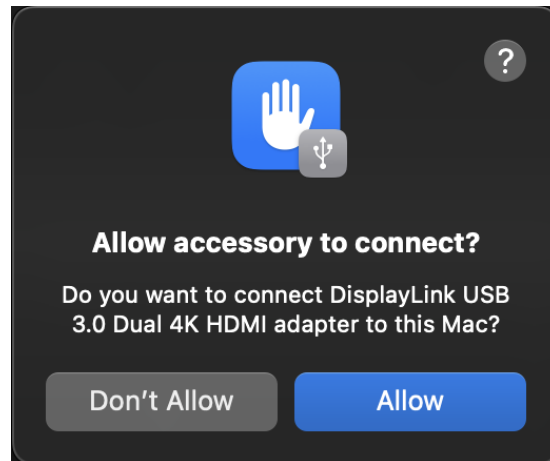


The DisplayLink software uses the screen recording API on macOS to output the video feed to the HDMI output connections. This means you have to adjust your operating system's security permissions to allow "DisplayLink Manager.app" to capture the screen.

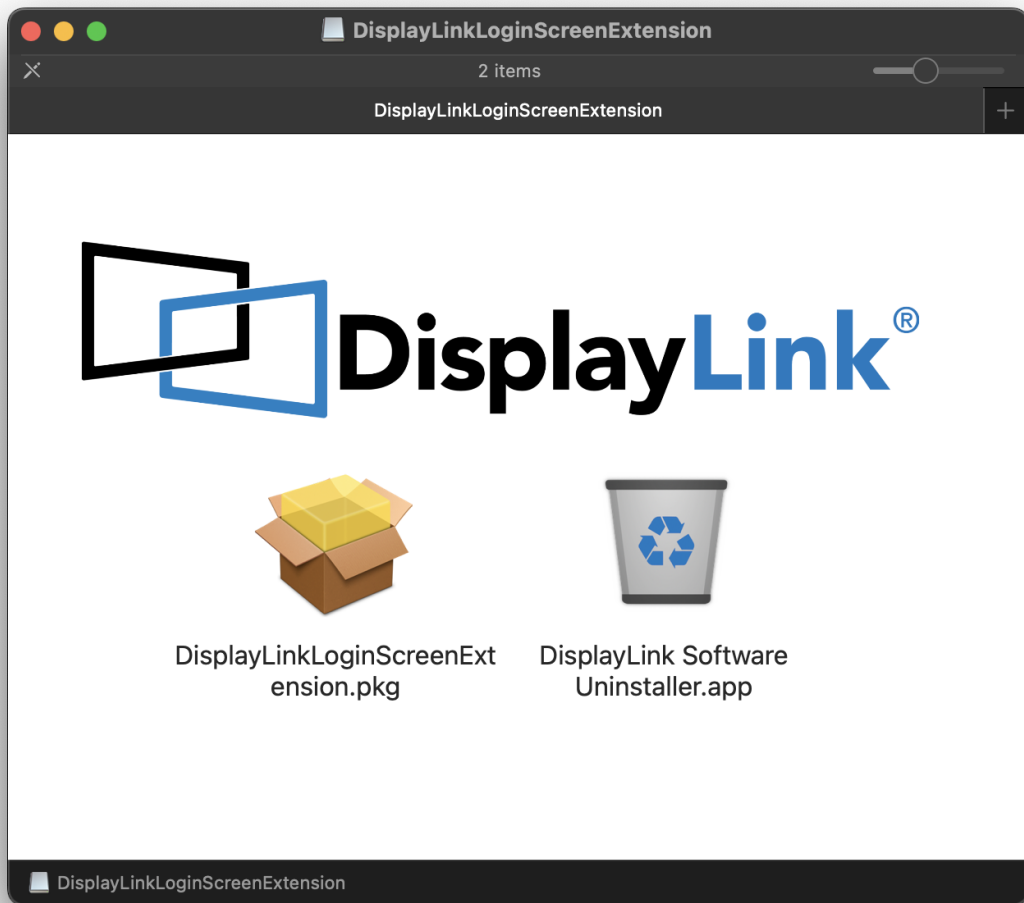




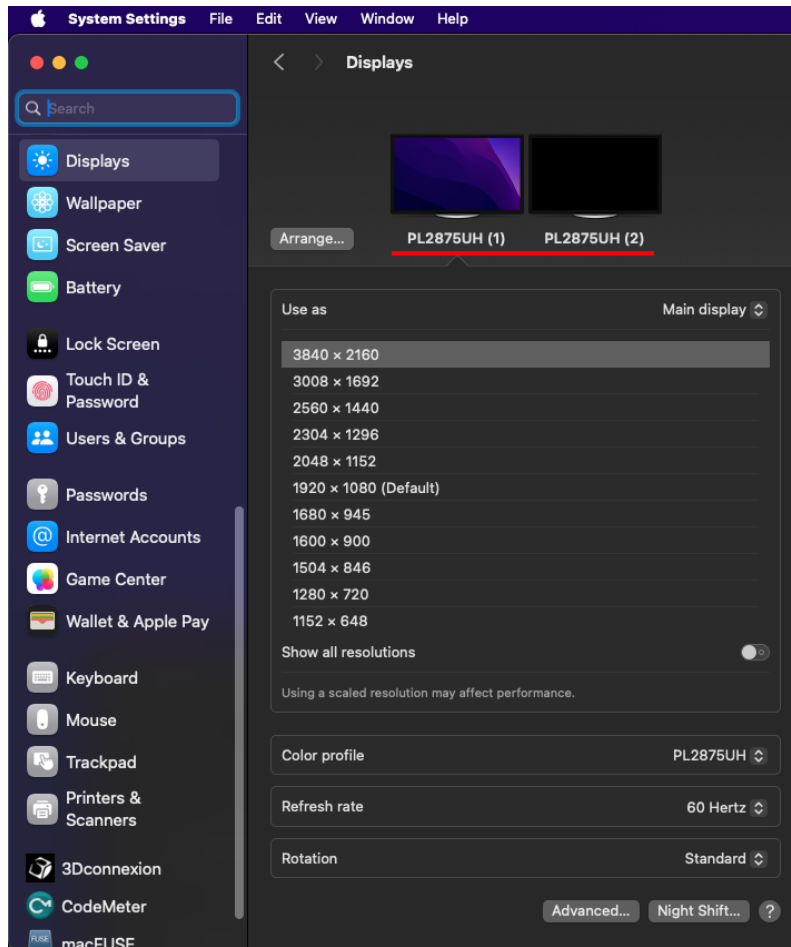
When you connect the USB-C cable for the first time, the macOS operating system will ask if you want to allow the device to be connected. Click "Allow" to continue.



The "DisplayLink Login Screen Extension" is used to add a new macOS menu bar item that allows you to adjust the output settings for the HDMI video connections.

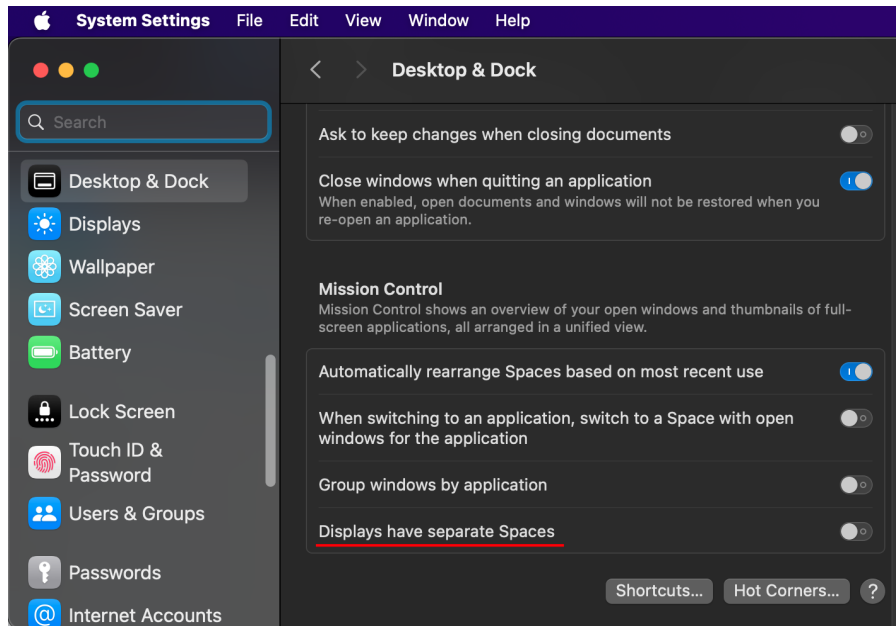


When you have monitors connected to the dual HDMI device they are controlled through the DisplayLink menu bar item, and the macOS Display system preferences panel.

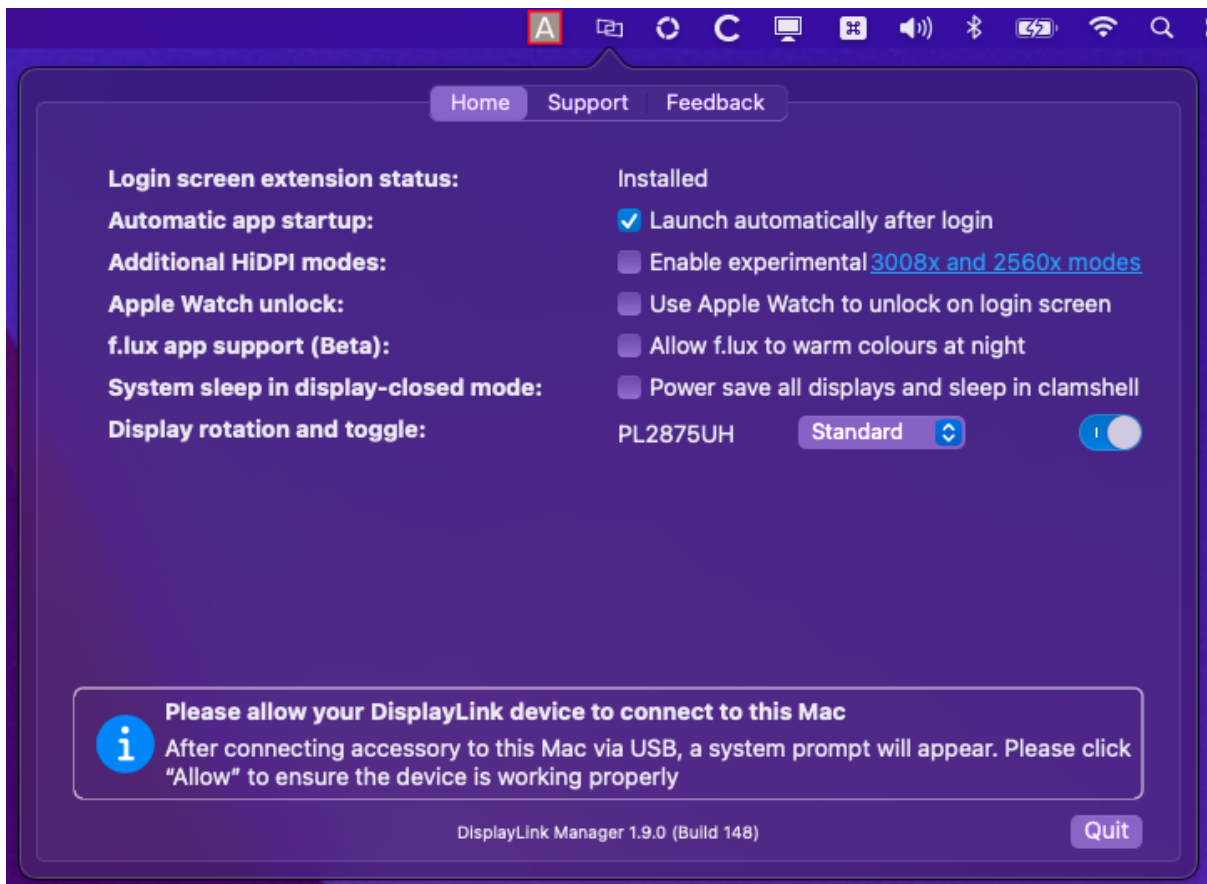


The top LCD display panel has the desktop wallpaper color set to black to avoid any "additive compositing" effects that would reduce contrast in images shown on the lower display in mono 2D.

The Mission Control system preference has the option to show extra menu bars on external displays turned off for "spaces". The macOS menu bar is configured to exist on the lower LCD display panel for convenience.



There are several options in the DisplayLink menu item. Features you can turn on include enabling experimental support for macOS "HiDPI" aka "retina resolution" output modes, as well as allowing for per-display rotation.



What's Next

My objective for this R&D project is to get the dual HDMI adapter device running as an OpenXR + Monado based fullscreen graphics output on macOS.

This Monado driven stereo 3D graphics approach means my own rendering code can seamlessly handle the horizontal view flipping on the top 3DPluraView monitor panel. Recent macOS graphics drivers don't make horizontal flipping an easy task due to the depreciation of several API features.

The OpenXR based 6DoF view navigation will be controlled by a [3Dconnexion SpaceMouse Enterprise](#) input device.

Other experiments that will be carried out with a dual monitor passive stereo 3D display configuration on macOS involve Kartaverse 360VR stereo workflows, Assimilate LiveFX stereo 3D output, TouchDesigner NDI based I/O, and Resolve Studio + Nobe Display NDI plugin usage.