
Hardware setup for the Nvidia Jetson AGX Orin developer kit

Living Optics



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Key information

For the Living Optics Camera to work successfully with your Nvidia Jetson AGX Orin developer kit, there are some minimum requirements:

- Installation of the provided custom case replacement.
- A fast, large storage device such as an 2TB NVMe drive (M.2 2280) that is mounted to the filesystem.

Warning - The Living Optics Camera can generate data at ~600MB per second! If you use the Living Optics Camera without additional storage, you will completely fill up the flash storage on the Nvidia Jetson AGX Orin developer kit in a matter of minutes. This will likely render the system exceptionally slow or even unusable. We do not recommend using an external harddrive for recording of data as the USB bus speed will be insufficient.

We also recommend the system has the following setup:

- A heatsink for the NVMe drive: Thermalright M.2 2280 Heatsink.

Note - There is restricted space for an NVMe heatsink so check the dimensions before purchasing. The recommended version above has been tested to fit.

For more details, refer to the Nvidia Jetson AGX Orin user guide.

Restrictions

The Living Optics Camera has been designed to be easy to install and uninstall on an Nvidia Jetson AGX Orin developer kit. However there is some key information to understand before installing it:

- The Living Optics Camera connects to the Nvidia Jetson AGX Orin developer kit via the 128-pin camera connector socket, using an interface card that takes up the entire connector. This means that any other devices you wish to connect to Nvidia Jetson AGX Orin developer kit using that connector will be unable to. Other video devices.
- The Living Optics Camera is unable to be connected to the Nvidia Jetson AGX Orin developer kit with the standard provided base from Nvidia. As a result it needs to be replaced with the Living Optics custom base to enable connection.

Installation

Prerequisites for installation

- Custom case replacement from Living Optics
- Nvidia Jetson AGX Orin developer kit

Process

We recommend using these instructions in conjunction with the video showing the installation process at <https://livingoptics.com/getting-started>

- Remove the 4 screws in the base of the Nvidia Jetson AGX Orin developer kit. Place them to the side.
- Remove the base, taking care of the rubber connector still attached to the board and flip over.
- Remove the screw attaching the rubber connector to the base and keep for a future step.
- Remove the silicone button component and the light guide from the base and set both to the side.
- Take the custom case component supplied with your Living Optics Camera and attach the light guide and silicone button component.
- Then using the screw from the earlier step, attach the rubber connector onto the custom case component.
- Now place the custom case component onto the Nvidia Jetson AGX Orin developer kit and Use the 4 screws from the first step to attach onto the board.
- Attach the CMOS battery to the RTC connector.
- Insert the 3 stand-offs from the B.8 pouch to their respective holes, taking care to avoid pinching the Wi-Fi antenna.

Note - This is the last point to attach your NVMe + heatsink.

- Insert the Living Optics interface card into the camera connector on the Nvidia Jetson AGX Orin developer kit.
- Screw down using the 3-off M2.5 x 6mm in the B.5 pouch.
- Finally attach the custom lid using the 3-off M2.5 x 16mm screws provided in the B7 pouch.

The system is now ready to be used and have the software installation take place. See the software setuo for more information.

NVMe drive

If you are adding an NVMe drive to the Nvidia Jetson AGX Orin developer kit, you will need to make sure that it is mounted in the filesystem before it can be used. Running the Living Optics Setup package will mount the NVMe drive to the correct location.