

ADVANTECH

ASR-A701DVK-G01

ASR-A701, NVIDIA® Jetson Orin™ NX, 2 x GMSL Development Kit

Startup Manual

Packing List

Before you begin installing your board, please make sure that the following items have been shipped:

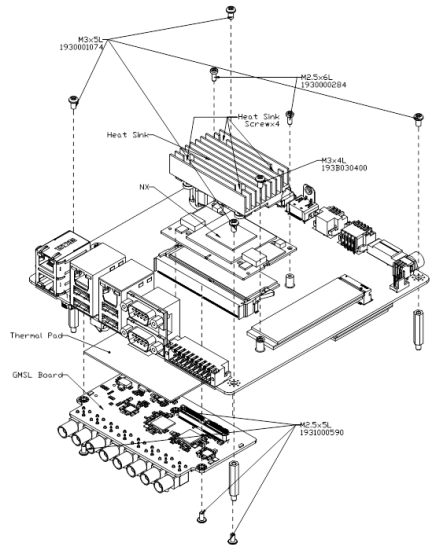
1. 1 x ASR-A701-M1A1 and 1 x AFE-RM04-4PA1 pre-assembled
2. 1 x M.2 2280 128G NVMe, with preloaded Ubuntu 22.04 with JetPack 6.1 image & GMSL camera driver
3. 2 x Gemini 335LG 3D GMSL cameras, (P/N:96ICAM-335)
4. 1 x Cooler (P/N: 1970006229T001)
5. 1 x Adaptor (P/N: 96PSA-A230W24P4-3)



If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

Mechanical Assembly

Mechanical Assembly (pre-assembled at the factory)



For more information on this and other Advantech products, please visit our website at:

<http://www.advantech.com>

For technical support and service, please visit our support website at:

<http://support.advantech.com.tw>

This manual is for the ASR-A701DVK-G01 series Rev. A1.

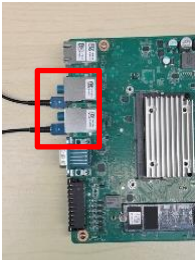
1st Edition
Jan 2026

Setup before powering on

1. Take the heat spreader from the box and peel off the thermal pad protective film. Attach the bracket and secure the heat spreader to the Orin NX module using the four screws.
2. Open the **top sync port cover** of the Gemini 335Lg camera. Switch the **USB/GMSL toggle** on the right to "**M**" mode, then close the cover.



3. Connect one end of the **GMSL cable** to the camera. Ensure it clicks into place and is firmly attached.
4. Connect the GMSL cable to the board. When using 1 camera, connect either FAKRA 2 or FAKRA 4. When using 2 cameras, connect both FAKRA 2 and 4



5. Connect the power supply to the mainboard. The system is set to **ATX mode** by default; use the power button to initiate the boot process.



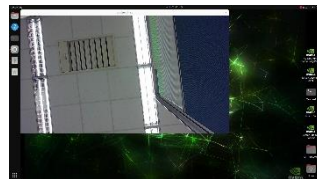
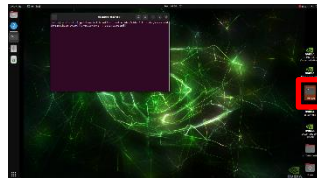
6. When After booting into the OS, open the Terminal and enter the following command to verify the GMSL camera feed:

For a single camera:

```
gst-launch-1.0 v4l2src device=/dev/video2 ! video/x-raw,width=1280,height=720,framerate=30/1 ! autovideosink
```

For a dual-camera setup, use the following to enable the second camera:

```
gst-launch-1.0 v4l2src device=/dev/video10 ! video/x-raw,width=1280,height=720,framerate=30/1 ! autovideosink
```



7. For detailed SOP, please visit the website for Gemini335LG setup and ROS2 streaming.

OS Built In

1. Ubuntu 22.04 with JetPack 6.1 (kernel 5.15.148)
2. Ubuntu SUSI API
3. Orbbec Gemini 335LG camera driver
4. Advantech Robotic Suite (ROS2 environment)
5. Advantech Robotic Suite extension for camera Gemini 335L