

AFE-R360DVK-G02

AFE-R360, 125H, 2 x GMSL (2.5MP) Development Kit

Startup Manual

Packing List

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

- 1 x AFE-R360C5P-Q5A1 and 1 x MIOe-GMSL-4PA1 pre-assembled
- 1 x SQR-SD5N16G5K6HNAG, SODIMM DDR5 5600 16GB
- 1 x SQF-C8BV2-128GDEDC, M.2 2280 128G NVMe, with preloaded Ubuntu 22.04 image & GMSL camera driver
- 2 x oToCAM222 GMSL cameras, 1920x1280 (P/N: 961CAM-222)
- 1 x Cooler (P/N: 1970005512T001)
- 2 x GMSL cables 100cm (P/N: 1751000759-01)
- 4 x COM RS-232 cables 20cm (P/N: 1700031582-01)
- 1 x USB 2.0 cable (PN: 1700030406-01)
- 1 x power Y-cable for AFE-R360 and MIOe-GMSL (P/N: 1700023503-01)
- 1 x screw kit for M.2 expansions



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

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>

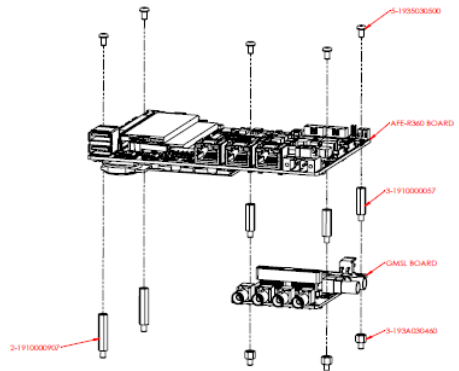
This manual is for the AFE-R360DVK-G02 series Rev. A1.

Part No. 2046R36020
Printed in China

1st Edition
November 2025

Mechanical Assembly

Mechanical Assembly (pre-assembled at the factory)



AFE-R360DVK-G02 User Notes

Camera setup before powering on

1. Camera power is provided from [DCIN1]. Connect the power cable (P/N: 1700023503-01) to the MIOE-GMSL-4PA1 [DCIN1] and AFE-R360 [DCIN1], and use $\geq 120W$ power.



AFE-R360DVK-G02 User Notes (Cont.)

2. Connect the GMSL cable (P/N: 1751000759-01) to the camera.
Make sure the cable is buckled to the connectors, as in the picture



Select either side of the GMSL cable.
Attach the latch of the GMSL cable to the clip of the camera.



Connect the cable to the camera until fully attached.

3. Connect the GMSL cable to the MIOe-GMSL [CN1].



Clip the other side of the cable to the MIOe-GMSL CN1.



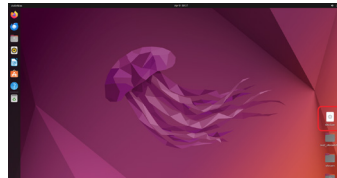
Connect the cable to the CN1 until the two parts are fully attached.

4. Repeat steps 2 and 3, and connect 2 x GMSL cables to the cameras and the MIOe-GMSL [CN1] and [CN3].

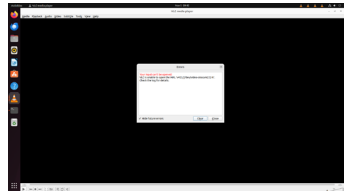
AFE-R360DVK-G02 User Notes (Cont.)



5. The BIOS (version: AB1.10) default is set to enable 4x oToCAM222 GMSL cameras. connecting 2x cameras can leverage the same BIOS setting.
6. Power on the AFE-R360.
7. When booting to the OS, press "otocam" to enable GMSL cameras.



8. When the display window appears, you will see four windows pop-up. Since currently two cameras are connected, two windows will appear as shown below. This is a known notice, and do not affect operation. Suggest to close the two unused windows and utilize the operating windows with live camera streaming.



9. Inside "ros2_otocam222", follow the "readme" instructions to enable camera streaming to the ROS2.
10. For detailed SOP, please visit the website for otocam222 setup and ROS2 streaming.

OS Built In

1. Ubuntu 22.04 (kernel 6.5.0-1027-oem)
2. Ubuntu SUSI API
3. oToCAM222 camera driver
4. Advantech Robotic Suite (ROS2 environment)
5. Advantech Robotic Suite extension for camera oToCAM222