

Sanpyl Sanpyl839rmqw2dg

Sanpyl 5MP 160° Wide Angle Night Vision IR Camera Module User Manual

Model: Sanpyl839rmqw2dg

1. INTRODUCTION AND OVERVIEW

The Sanpyl 5MP 160° Wide Angle Night Vision IR Camera Module is designed for use with Raspberry Pi Zero series devices. It features a 5-megapixel lens with a 160° wide-angle view, supporting 1080p HD video capture. Equipped with an OV5647 sensor, it offers manual focus capability and supports infrared (IR) functionality for night vision when paired with an external IR fill light.

This module is built to be robust, capable of operating in temperatures ranging from -20°C to 70°C, ensuring stable performance in various environments.



For OV5647 Sensor Chip
Suitable for RPi 5 Zero series
Field of view 160°
Focus length 3.15mm
Support manual focus (twist lens)
In the light environment will be reddish
imaging
Night vision effect need to buy infrared
fill light separately

Image 1.1: Sanpyl Camera Module with OV5647 Sensor. This image highlights the main components of the camera module, including the OV5647 sensor chip and the adjustable lens.

Important Notice: This product does not include an infrared fill light. For night vision capabilities, an infrared fill light must be purchased and installed separately. The IR camera does not have a light sensitivity function, which means images may appear reddish in well-lit conditions.

2. SETUP AND INSTALLATION

Follow these steps to correctly install your Sanpyl Camera Module with your Raspberry Pi Zero series device:

1. **Prepare the Raspberry Pi:** Ensure your Raspberry Pi is powered off and disconnected from any power source. Carefully lift the clip on the CSI (Camera Serial Interface) slot using a suitable tool, such as a small plastic spudger or toothpick.
2. **Connect the Ribbon Cable:** Insert one end of the provided 15cm ribbon cable into the CSI interface on the Raspberry Pi. Ensure the side of the ribbon cable with the metal contacts faces the diagonal position of the interface. Gently push the clip back down to secure the ribbon cable.
3. **Attach to Camera Module:** Plug the other end of the ribbon cable into the corresponding port on the camera module. Ensure the metal contacts are correctly aligned and the cable is securely seated.
4. **Secure the Camera:** Position the camera module appropriately on your Raspberry Pi setup. The module is designed to be fixed with standard M2x6 screws (not included), which can be used to mount it securely if desired.
5. **System Update:** After physical installation, power on your Raspberry Pi. It is recommended to update your system and camera drivers to ensure proper functionality. Refer to your Raspberry Pi's official documentation for specific commands to enable and update camera modules.

Compatibility Suitable for RPi 5 Zero series

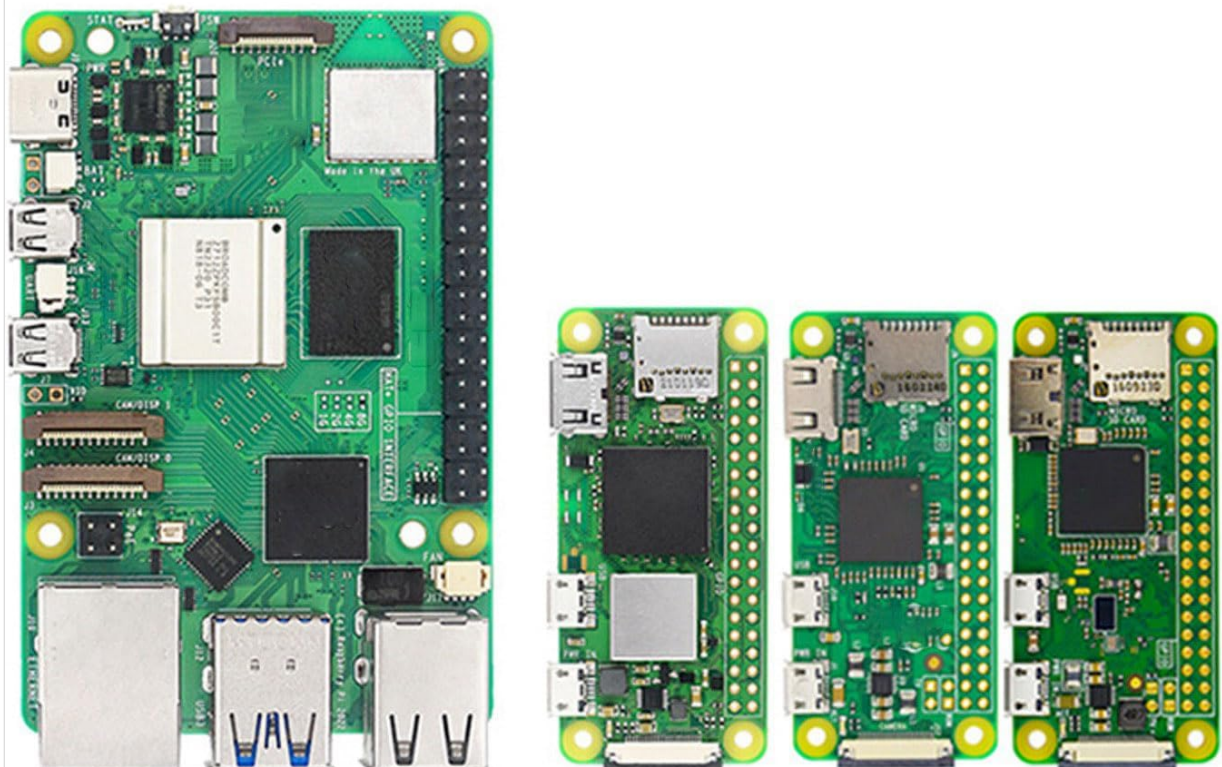


Image 2.1: Compatibility with Raspberry Pi Zero Series. This image demonstrates the camera module's compatibility with different models of the Raspberry Pi Zero series.

3. OPERATING INSTRUCTIONS

Once the camera module is installed and the system drivers are updated, you can begin using it for image and video capture.

3.1. Manual Focus Adjustment

The camera module features a manual focus lens. To adjust the focus, gently twist the lens barrel until the desired clarity is achieved. It is recommended to perform this adjustment while viewing the camera's live feed on your Raspberry Pi to ensure optimal focus for your specific application.

3.2. Night Vision Functionality

For night vision, an external infrared (IR) fill light is required. The camera module supports IR functionality, allowing it to capture images in low-light or no-light conditions when illuminated by an IR source. Without an IR fill light, the camera will not provide night vision. In environments with sufficient visible light, images captured by the IR camera may exhibit a reddish tint due to its sensitivity to infrared light.



Image 3.1: Infrared Fill Light Effect. This image illustrates the difference in performance when an infrared fill light is used with the camera module for night vision.

4. MAINTENANCE

To ensure the longevity and optimal performance of your Sanpyl Camera Module, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry, lint-free cloth to gently clean the lens and module surface. Avoid using harsh chemicals or abrasive materials that could scratch the lens or damage components.
- **Storage:** When not in use, store the camera module in a clean, dry environment, away from direct sunlight and extreme temperatures.
- **Environmental Conditions:** The module is designed to withstand temperatures from -20°C to 70°C. Avoid exposing it to conditions outside this range, as well as high humidity or corrosive environments.
- **Handling:** Handle the module by its edges to avoid touching the lens or electronic components. Static electricity can damage sensitive electronics, so take appropriate precautions.

5. TROUBLESHOOTING

If you encounter issues with your Sanpyl Camera Module, consider the following troubleshooting steps:

- **No Image/Video Output:**
 - Ensure the ribbon cable is correctly and securely inserted into both the camera module and the Raspberry Pi's CSI port. Check that the metal contacts are facing the correct direction.
 - Verify that the camera module is enabled in your Raspberry Pi's configuration settings (e.g., using `raspi-config`).
 - Confirm that your Raspberry Pi's operating system and camera drivers are up to date.
- **Blurry Images:**
 - Adjust the manual focus by gently twisting the lens barrel until the image becomes clear.
 - Ensure the lens is clean and free from dust or smudges.
- **Reddish Tint in Images:**
 - This is normal behavior for an IR camera in well-lit conditions due to its sensitivity to infrared light. It is not an indication of a fault.
- **Night Vision Not Working:**
 - Confirm that an external infrared (IR) fill light is properly installed and functioning. The camera module requires an external IR source for night vision.

6. SPECIFICATIONS

Feature	Specification
Item Type	Camera Module
Model Number	Sanpyl839rmqw2dg
Lens Pixels	5MP
IR Sensor Support	Yes
Focus Length	3.15mm

Focus Method	Manual
Lens Angle	160° Wide Angle
Screw Type	M2x6 Screws (for mounting)
Video Capture Resolution	1080p
Operating Temperature	-20°C to 70°C
Material	ABS, Optical Glass (Lens), Copper (Module components)
Item Weight	0.494 ounces
Package Dimensions	3.54 x 2.36 x 1.18 inches

7. WARRANTY INFORMATION

This Sanpyl Camera Module is covered by a manufacturer's warranty for 90 days from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by misuse, accident, unauthorized modification, or improper installation.

Please retain your proof of purchase for warranty claims.

8. SUPPORT

For technical assistance, troubleshooting, or further inquiries regarding your Sanpyl Camera Module, please refer to the official Sanpyl website or contact their customer support channels. Detailed contact information can typically be found on the product packaging or the brand's official online presence.

For additional resources and community support related to Raspberry Pi camera modules, consider visiting the official Raspberry Pi documentation and forums.