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> ZR30 4K 8MP Gimbal Camera User Manual

MDPXTJOG ZR30

ZR30 4K 8MP Gimbal Camera User Manual

Model: ZR30 | Brand: MDPXTJOG

1. INTRODUCTION

This manual provides comprehensive instructions for the safe and effective operation of your MDPXTJOG ZR30 4K 8MP 180X Hybrid 30X Optical Pod Zoom Gimbal Camera. The ZR30 is an advanced imaging system designed for professional applications, featuring a 4K 8MP sensor, 30X optical zoom, 180X hybrid zoom, and AI Smart Identify and Tracking capabilities. Please read this manual thoroughly before using the device.



Figure 1.1: Front view of the ZR30 4K 8MP Gimbal Camera. This image shows the main camera unit with its lens facing forward, mounted on the gimbal arm, and the vibration damping platform at the top.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent damage to the device or injury to yourself and others:

- Do not expose the camera to water or excessive moisture.
- Operate the device within the specified working temperature range (-10°C to 50°C).
- Ensure proper power supply (11V ~ 25.2V) to avoid electrical damage.

- Avoid direct exposure of the lens to strong light sources, such as the sun, as this may damage the image sensor.
- Handle the gimbal with care to prevent mechanical damage to the motors and sensors.
- Keep out of reach of children.

3. PACKAGE CONTENTS

Verify that all items are present in your package:

- ZR30 Gimbal Camera Unit (with quick release board)
- Power Cable
- Control Signal Cable (S.Bus/UART)
- Ethernet Cable
- Micro-HDMI Cable
- Mounting Hardware Kit
- User Manual (this document)

4. SETUP AND INSTALLATION

4.1 Mounting the Gimbal

The ZR30 comes with a quick release board for easy attachment to compatible platforms (e.g., drones, robotic arms). Ensure the mounting surface is stable and secure.

1. Attach the quick release board to your platform using the provided mounting hardware. Ensure it is firmly secured.
2. Align the ZR30 gimbal camera with the quick release board and slide it into place until it clicks, indicating a secure lock.
3. Verify that the gimbal is stable and does not wobble.



Figure 4.1: Side view of the ZR30 Gimbal Camera, highlighting the quick release board and mounting interface. This view shows the robust design of the gimbal arm and the attachment mechanism.

4.2 Electrical Connections

Connect the necessary cables before powering on the device.

- **Power:** Connect the power cable to the designated power input port on the gimbal. Ensure the power source provides 11V to 25.2V DC.

- **Video Output:**

- **Ethernet:** For high-bandwidth video streaming and UDP control, connect an Ethernet cable to the Ethernet port.
- **Micro-HDMI:** For direct video monitoring, connect a Micro-HDMI cable to a compatible display.

- **Control Signal Input:**

- **S.Bus/UART:** For traditional remote control integration, connect the S.Bus or UART cable to your flight controller or remote receiver.
 - **UDP (Ethernet):** If using Ethernet for video, UDP commands can also be sent over the same connection for control.
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Figure 4.2: Top view of the ZR30 Gimbal Camera, illustrating the various connection ports for power, video output, and control signals. This view provides a clear layout of the interface panel.

5. OPERATING INSTRUCTIONS

5.1 Powering On/Off

Once all connections are secure, apply power to the gimbal. The gimbal will perform a self-calibration sequence upon startup. Do not touch the gimbal during this process.

- **Power On:** Connect the power source. The gimbal will initialize and stabilize.
- **Power Off:** Disconnect the power source. Allow the gimbal to come to a complete stop before handling.

5.2 Camera Controls

Control of the camera's functions (zoom, focus, recording) is typically done via the connected control signal input (S.Bus, UART, or UDP).

- **Zoom:** Utilize the 30X optical zoom and 180X hybrid zoom for detailed imaging. Control zoom levels via your remote controller or software interface.
- **Focus:** The camera features auto-focus. Manual focus may be available via software control depending on your setup.
- **Video Recording/Streaming:** Initiate and stop video recording or streaming through the control interface. Refer to your specific ground station software or remote controller manual for detailed instructions.

5.3 Gimbal Control

The gimbal provides precise control over camera orientation.

- **Pitch Control:** Adjust the camera's vertical angle from -90° (straight down) to $+25^\circ$ (slightly upwards).
- **Yaw Control:** Rotate the camera horizontally from -270° to $+270^\circ$.
- **Angular Vibration Range:** The gimbal maintains stability within $\pm 0.01^\circ$ angular vibration, ensuring smooth footage.

5.4 AI Smart Identify and Tracking

The ZR30 features advanced AI capabilities for intelligent object identification and tracking. This functionality is typically enabled and configured through a compatible ground control software or SDK.

- Consult the software documentation for instructions on activating and utilizing AI tracking features.
- Ensure clear line of sight and sufficient lighting for optimal tracking performance.

6. MAINTENANCE AND CARE

Proper maintenance ensures the longevity and optimal performance of your ZR30 gimbal camera.

- **Cleaning:** Use a soft, dry cloth to clean the camera body. For the lens, use a specialized lens cleaning cloth and solution. Do not use abrasive cleaners or solvents.
- **Storage:** Store the camera in a cool, dry place, away from direct sunlight and extreme temperatures. Use the original packaging or a protective case when transporting.
- **Inspection:** Regularly inspect cables for wear and tear. Check mounting points for security.

7. TROUBLESHOOTING

If you encounter issues with your ZR30, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Gimbal does not power on.	Incorrect power voltage; loose power connection; faulty power supply.	Verify power supply is within 11V-25.2V. Check all power cable connections. Try a different power source.
No video output.	Loose video cable; incorrect video output settings; incompatible display.	Ensure HDMI/Ethernet cables are securely connected. Check display compatibility. Verify software settings for video output.

Problem	Possible Cause	Solution
Gimbal not responding to control.	Incorrect control signal connection; software configuration error; remote controller issue.	Check S.Bus/UART/Ethernet control cable connections. Verify software settings for control input. Ensure remote controller is properly paired and functioning.
Image is blurry or out of focus.	Lens dirty; auto-focus issue; manual focus required.	Clean the lens. If auto-focus is enabled, try refocusing. If manual focus is an option, adjust it.

If the problem persists, please contact MDPXTJOG customer support.

8. SPECIFICATIONS

Feature	Detail
Model Number	ZR30
Image Sensor	1/2.7"
Effective Megapixel	8 MP
Image Capture Resolution	4K
Focal Length	4.5±5% to 148.4±5% mm
Zoom	30X Optical, 180X Hybrid
Auto Focus	Yes
Video Output Ports	Ethernet, Micro-HDMI
Control Signal Input Ports	S.Bus, UART, UDP (Ethernet)
Working Voltage	11 ~ 25.2 V
Power Consumption	Summit 20 W
Working Temperature	-10 ~ 50 °C
Angular Vibration Range	±0.01°
Controllable Pitch Angle	-90° to +25°
Controllable Yaw Angle	-270° to +270°
Dimension (including quick release board)	132 x 100 x 159 mm
Weight (including quick release board)	628 g (approx. 22.15 oz)

9. WARRANTY AND SUPPORT

MDPXTJOG products are manufactured to high quality standards. This product comes with a standard manufacturer's warranty against defects in materials and workmanship. Please refer to the warranty card included with your product or visit the official MDPXTJOG website for detailed warranty terms and conditions.

For technical support, troubleshooting assistance, or warranty claims, please contact MDPXTJOG customer service through their official channels. Provide your product model number (ZR30) and purchase details when contacting support.

Online Support: www.mdpxtjog.com/support (Example link, replace with actual if known)

Email: support@mdpxtjog.com (Example email, replace with actual if known)



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