RunCam PHOENIX2-SPV3 Analog FPV Camera User Manual

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RunCam PHOENIX2-SPV3 Analog FPV Camera

SPECIFICATIONS

Category	Details
Image Sensor	1/2″ CMOS Sensor
Horizontal Resolution	1000 TVL
Lens	2.1mm (M12 mount, FOV D:155° H:125° V:96°)
Signal System	NTSC / PAL Switchable
S/N Ratio	>50dB (AGC OFF)
Electronic Shutter Speed	Auto
Auto Gain Control (AGC)	YES
Min. Illumination	0.001Lux @1.2F
WDR (Wide Dynamic Range)	Global WDR
Day/Night	Color

Category	Details
Housing Material	Magnesium Alloy
Power Input	DC 5-36V
Current Consumption	190mA @5V / 80mA @12V
Working Temperature	-10°C to 50°C
Dimensions	19mm × 19mm × 20mm
Weight	Approx. 5g

FEATURES

- **Superior Low Light Performance**: Thanks to the high-quality 1/2″ sensor, ideal for dusk or shady flying.
- **Excellent Wide Dynamic Range (WDR)**: Crisp details even in challenging lighting conditions.
- **Magnesium Alloy Case**: Strong, lightweight, and resistant to heat.
- **Analog Video Output**: Compatible with traditional analog VTX systems.
- **Easy NTSC/PAL Switching**: Adjustable to match your setup easily.
- **Minimal Latency**: Near-instant feedback to your FPV goggles.
- **Pre-installed with Popular Lens**: Wide FOV for immersive flying.
- **Voltage Range Flexibility**: Handles from 5V to 36V input – great for different builds.
- **Compact and Lightweight**: Perfect for racing drones or small quad builds.

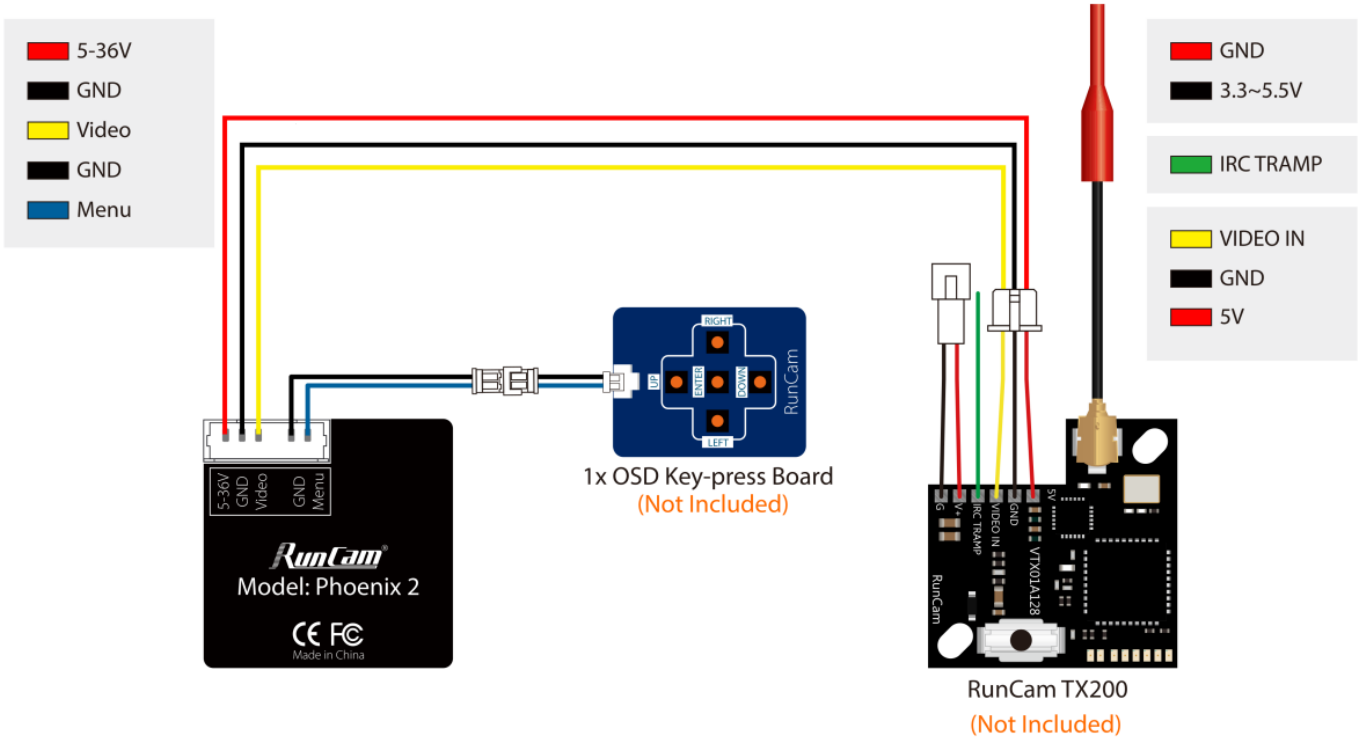
USAGE INSTRUCTIONS

1. **Installation:**
    - Mount the camera to your frame using the appropriate screws or mounting bracket (M2 screws often used).
    - Make sure the lens is clean and unobstructed.
2. **Wiring:**
    - **Yellow Wire**: Video signal (connect to VTX Video In).
    - **Red Wire**: Positive voltage input (5V to 36V).
    - **Black Wire**: Ground (GND).

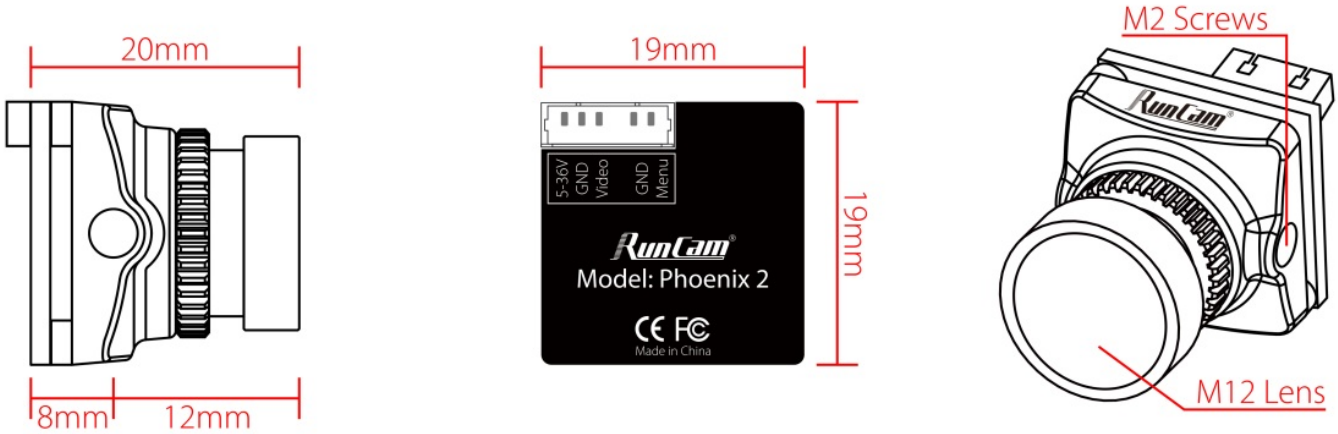
- **Orange Wire** (optional): OSD Control or Menu Adjustments.

3. **Setting NTSC/PAL:**
   - Use the OSD joystick or menu control button.
   - Navigate to the system settings and select NTSC or PAL according to your FPV goggles preference.
4. **Fine-tuning:**
   - Adjust brightness, contrast, sharpness, and WDR settings via OSD if needed.
   - Recommended to fly a test flight and tweak based on the environment lighting.

Joystick Control

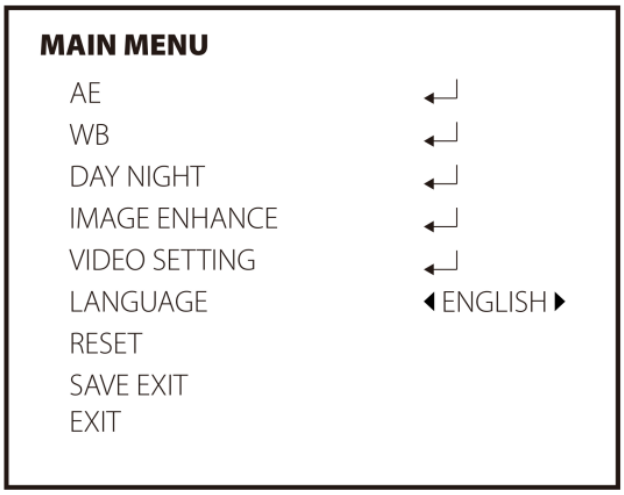


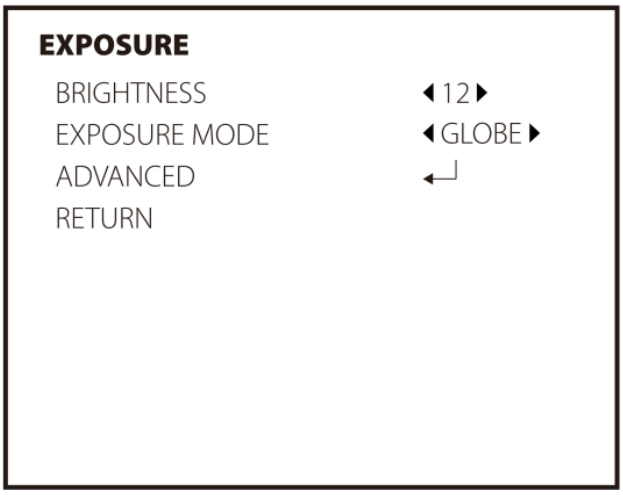
Dimensions & Installation



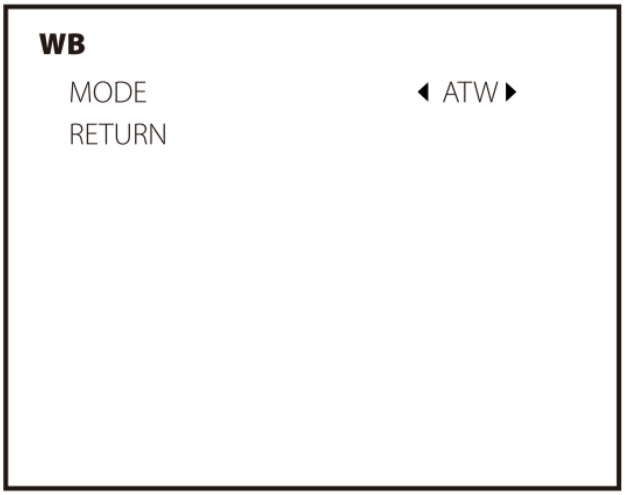
Camera Menu

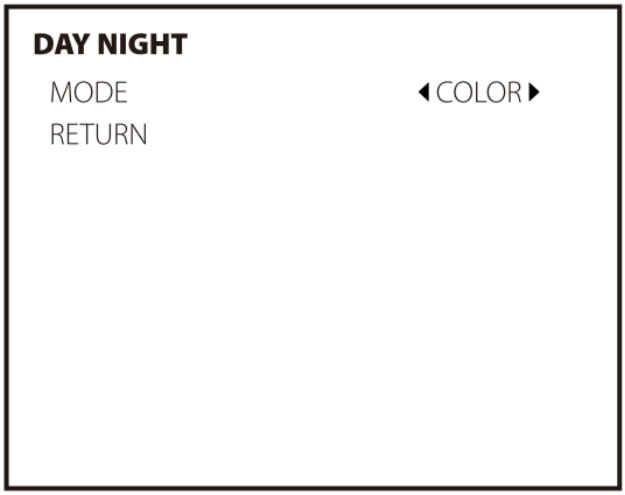
- EXPOSURE MODE (GLOBE/BLC)



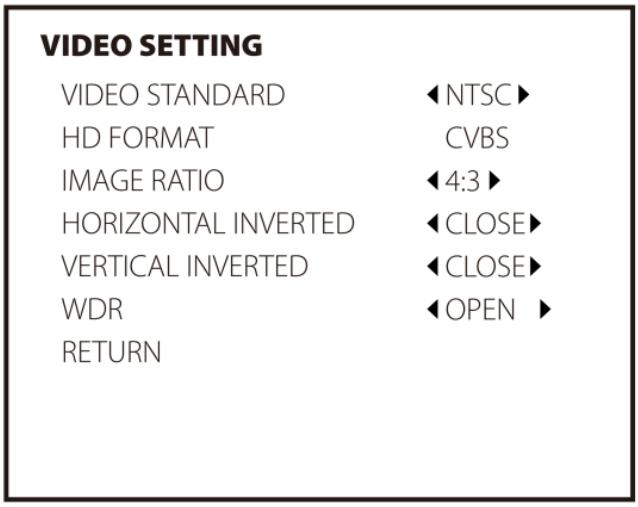


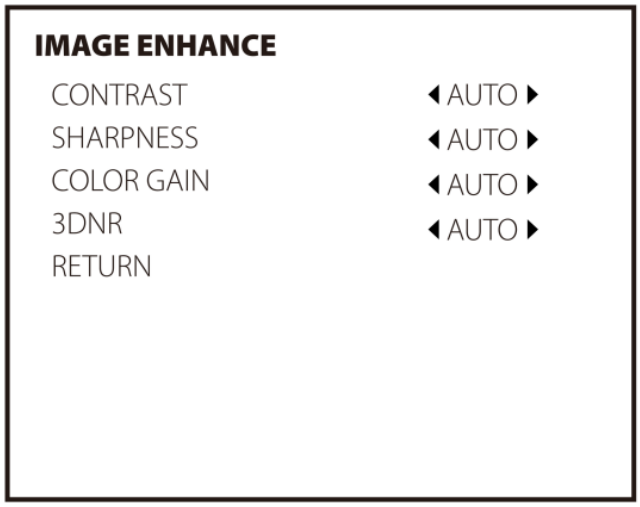
- MODE (ATW/MWB)
- MODE (COLOR / BW / EXT / AUTO)





- VIDEO STANDARD (NTSC/PAL)
- IMAGE RATIO (4:3 /16:9)
- CONTRAST (AUTO/MANUAL)
- SHARPNESS (AUTO/MANUAL)
- COLOR GAIN (AUTO/MANUAL)





TROUBLESHOOTING

Problem	Possible Cause	Solution
No video signal	Loose wire, incorrect VTX connection	Check all solder joints and connections.
Image is dark	Lens smudged, wrong settings	Clean the lens, adjust brightness/WDR settings.
Video flickering	Interference from VTX or ESC	Use better shielding or separate power supplies.
White or overexposed screen	Incorrect exposure settings	Lower brightness or turn on WDR.
Camera overheating	Poor ventilation	Check installation, ensure airflow.
Blurred Image	Dirty lens or incorrect focus	Clean lens and manually refocus if adjustable.

SAFETY

PRECAUTIONS:

- **Voltage Check**: Ensure your voltage supply is within 5V-36V. Overvoltage can destroy the camera.
- **Proper Wiring**: Always double-check wiring polarity before powering up.

- **Lens Care**: Avoid touching the lens with bare fingers; clean only with microfiber cloth.
- **Water Protection**: This camera is **not waterproof** — protect it during rainy or wet conditions.
- **OSD Settings**: Don't change settings while flying to avoid losing video feed unexpectedly.
- **Firmware Updates**: Only apply firmware updates from official sources.
- **Mount Securely**: Vibration or loose mounting can affect image quality and damage connectors.
- **Avoid Direct Sunlight Exposure**: For long periods, direct sunlight into the lens can damage the image sensor.
- **Handling**: Magnesium alloy casing is durable but can be scratched – handle with care.
- **Disconnect When Not in Use**: To prevent accidental overheating or battery drain.

FAQs

1. **How do I switch between NTSC and PAL video formats on the RunCam PHOENIX2-SPV3?**
To switch between NTSC and PAL video formats, you need to access the camera's OSD (On-Screen Display) menu. Use the joystick button or menu control to navigate to the system settings and select either NTSC or PAL based on your FPV goggles' compatibility.

2. **Can I use the RunCam PHOENIX2-SPV3 with a 12V power supply?**
Yes, the RunCam PHOENIX2-SPV3 supports a voltage range from 5V to 36V, meaning it can easily be powered using a 12V power supply, which is common in many drone setups. Just make sure to connect the red wire to the positive terminal of your power source and the black wire to ground.

3. **Why is my video feed flickering or not displaying properly?**
Flickering or poor video feed can be caused by interference from other components such as the VTX or ESC. To fix this, try adding more shielding to the camera or separating power lines between sensitive components. Ensure all connections are secure and there is no loose wiring.

Documents / Resources

	RunCam PHOENIX2-SPV3 Analog FPV Camera [pdf] User Manual PHOENIX2-SPV3 Analog FPV Camera, PHOENIX2-SPV3, Analog FPV Camera, FPV Camera, Camera

References

- User Manual

RunCam

Analog FPV Camera, camera, FPV Camera, PHOENIX2-SPV3, PHOENIX2-SPV3 Analog FPV Camera, RunCam

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