AKK KC03

AKK KC03 FPV Camera and Transmitter User Manual

Model: KC03

Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your AKK KC03 FPV Camera and 600mW FPV Transmitter. Please read this manual thoroughly before use to ensure proper functionality and safety.

Safety Precautions

- Always ensure correct polarity when connecting power to avoid damage to the unit.
- Do not operate the FPV transmitter without an antenna connected. This can cause permanent damage to the transmitter.
- Ensure adequate ventilation for the transmitter during operation, as it can generate heat.
- Verify local regulations regarding FPV transmission frequencies and power levels before operation.
- Keep the device away from water and moisture.

Package Contents

Verify that all items are present in your package:

- AKK KC03 800TVL FPV Camera
- AKK 600mW FPV Transmitter (VTX)
- Antenna (RP-SMA connector)
- Connecting Cable for Camera and VTX



Image: Complete AKK KC03 FPV Camera and Transmitter kit, including the camera, VTX, antenna, and connecting wires.

Product Overview

The AKK KC03 system combines an 800TVL camera with a 600mW 5.8GHz FPV transmitter, designed for FPV applications. The camera features a 2.8mm lens with a 120-degree viewing angle and supports NTSC video format. The transmitter offers switchable channels and bands via push buttons.



Image: The AKK KC03 FPV transmitter (left) with its digital display and antenna connector, alongside the compact FPV camera (right).



Image: Front view of the AKK KC03 FPV camera, highlighting the lens.



Image: Close-up of the AKK KC03 FPV transmitter module, showing the 40CH 5G8 600MW label.

Specifications

Camera Specifications:

- **Image Sensor:** 1/3" CMOS
- **Pixels:** 1280(H) x 720(V)
- **Scanning System:** NTSC
- **Horizontal Resolution:** 800TVL
- **Minimum Illumination:** 0.05LUX/F1.2

- **Synchronization:** Internal
- **White Balance:** Automatic
- **Automatic Gain:** Auto
- **Back Light Compensation:** Auto
- **Digital Noise Reduction:** YES (2D)
- **Gamma Correction:** 0.45
- **Electronic Shutter:** NTSC: 1/60~1/100000S
- **S/N Ratio:** ≥ 50dB
- **Video Output:** 1.0Vp-p/75Ω
- **Power Supply:** DC5V 1000mA
- **Working Current:** 135+/-5mA
- **Working Temperature:** -40°C ~ +150°C
- **Viewing Angle:** 120 degrees

Transmitter Specifications:

- **Video Format:** NTSC/PAL
- **Output Impedance:** 50 Ohm
- **Transmitting Distance:** > 3000m (open area)
- **Antenna Connector:** RP-SMA connector
- **Supply Current:** 280 mA
- **Operating Temperature:** -10°C ~ +85°C
- **Video Band Width:** 0-8.0 MHz
- **Audio Carrier Frequency:** 6.5 MHz
- **Video Input Level:** 0.8, 1.0, 1.2 Vp-p
- **Video Input Impedance:** 75 Ohm
- **Audio Input Level:** 0.5, 2.0 Vp-p
- **Audio Input Impedance:** 10K Ohm
- **Operating Voltage:** 7-20 V (supports 2S-4S battery, not 6S)
- **Output Voltage (VOUT):** 5 V (for camera power)

Setup

1. Connecting the Camera to the Transmitter

Use the provided connecting cable to link the camera to the FPV transmitter. Ensure the connector is oriented correctly to avoid damage. The cable typically has color-coded wires for video, ground, and power.

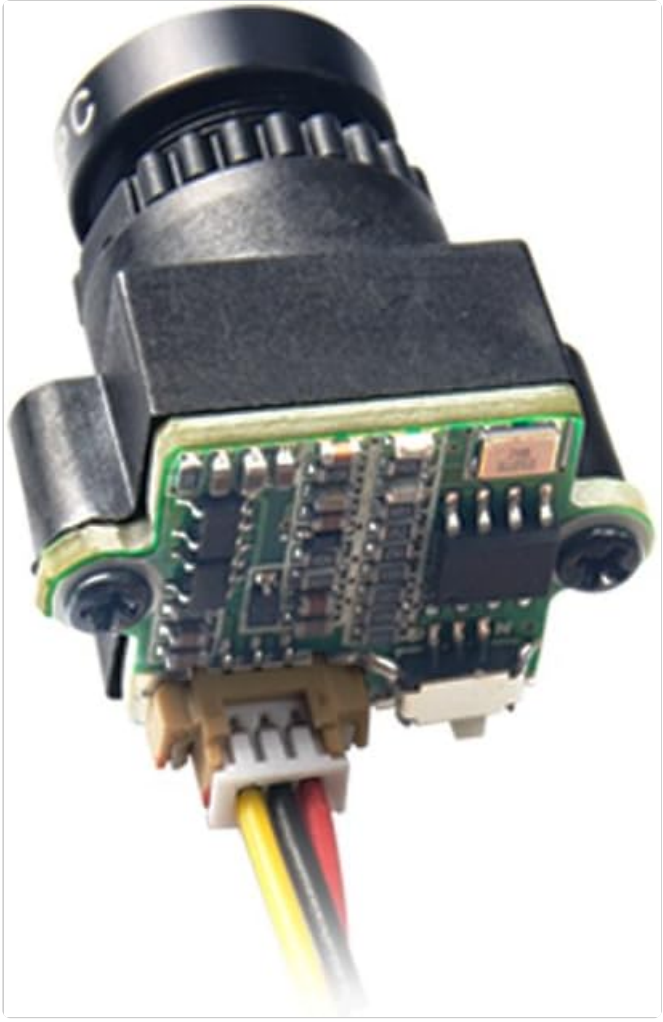


Image: The AKK KC03 FPV camera showing its wiring harness for connection to the transmitter.

2. Attaching the Antenna

Screw the provided RP-SMA antenna onto the RP-SMA connector on the FPV transmitter. Hand-tighten only. **Never power on the transmitter without an antenna connected.**



Image: The AKK KC03 FPV transmitter with the antenna attached and the camera connecting wires visible.

3. Power Connection

Connect the main power input of the FPV transmitter to your drone's power distribution board or a suitable battery. The transmitter requires an operating voltage between 7V and 20V (2S-4S LiPo battery). The transmitter provides a regulated 5V output to power the camera.

Important Note: While the camera operates on 5V, the transmitter itself requires a higher input voltage (7-20V). Ensure your power source meets the transmitter's requirements for stable operation.

Operating

Powering On

Once all connections are secure and the antenna is attached, connect the main power source to the FPV transmitter. The digital display on the transmitter will illuminate, indicating its current channel and band.

Changing Channels and Bands

The AKK KC03 FPV transmitter features two push buttons for adjusting frequency settings:

- **Channel Button:** Press this button briefly to cycle through the available channels within the current band.
- **Band Button:** Press and hold this button for a few seconds to cycle through the available frequency bands.

The digital display will update to show the selected channel and band. Match these settings with your FPV receiver for optimal video reception.

NTSC/PAL Switching (Camera)

The camera is designed for NTSC scanning system. If your FPV monitor or goggles support both NTSC and PAL, ensure they are set to NTSC for compatibility with the camera's output.

Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the camera lens and transmitter module. Avoid using harsh chemicals or abrasive materials.
- **Storage:** Store the unit in a cool, dry place away from direct sunlight and extreme temperatures when not in use.
- **Antenna Care:** Regularly check the antenna and its connector for any signs of damage. A damaged antenna can significantly reduce transmission range and potentially harm the VTX.
- **Cable Inspection:** Periodically inspect all connecting cables for fraying or damage. Replace any damaged cables immediately.

Troubleshooting

Problem	Possible Cause	Solution
No video signal	Incorrect channel/band on VTX or receiver; Loose cable connections; Insufficient power to VTX/camera; Damaged camera or VTX.	Verify VTX and receiver frequencies match; Check all wiring connections; Ensure VTX receives 7-20V input and camera receives 5V output from VTX; Test components individually if possible.
Poor video quality / Short range	Damaged or incorrect antenna; Interference from other devices; Obstructions; Low power output setting (if applicable).	Ensure antenna is securely attached and undamaged; Use a compatible antenna type (RP-SMA); Move away from sources of interference; Ensure clear line of sight; Check VTX power output (KC03 is fixed at 600mW).
VTX LEDs not turning on / VTX not functioning	Insufficient input voltage to VTX.	Ensure the VTX is supplied with at least 7V (up to 20V). A 5V supply is only for the camera, not the VTX itself.
Camera not powering on	No 5V output from VTX; Damaged camera cable; Damaged camera.	Verify the VTX is powered correctly and providing 5V to the camera; Check camera cable for continuity; Replace camera if necessary.

Warranty

AKK products are typically covered by a limited manufacturer's warranty against defects in materials and workmanship. Please refer to the official AKK website or your purchase documentation for specific warranty terms and conditions, including duration and claim procedures. Keep your proof of purchase for warranty service.

Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact AKK customer support through their official website or the retailer from whom you purchased the product. Provide your product model (KC03) and a detailed description of the issue for efficient support.

AKK Official Website: Visit the AKK Store on Amazon

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question