

Walksnail WN04-6009S

Walksnail Avatar HD Digital FPV System VTX (Nano) Kit User Manual

Model: WN04-6009S

Brand: Walksnail

INTRODUCTION

The Walksnail Avatar HD VTX Nano Kit is a compact and advanced digital FPV system designed for high-definition video transmission. It features a nano-sized digital camera and a Video Transmitter (VTX) that is compatible with HD Goggles such as the Avatar Goggles and the new Fat Shark Dominator HD. This system utilizes H.265 encoding technology to deliver 1080p FPV image quality with ultra-low latency, ensuring a superior flying experience.

Key features include a dual-antenna design for stable and powerful signals over a 4km range, a lightweight VTX weighing only 16g with a 25.5x25.5mm mounting hole distance for easy installation, support for both high and standard frame rates with an average latency of 22ms in high frame rate mode, and 8GB of built-in storage for recording 1080p or 720p HD flight videos without interference.

WHAT'S IN THE BOX

Upon unboxing your Walksnail Avatar HD Digital FPV System VTX (Nano) Kit, please verify that all the following components are present:

- USB Cable
- User Manual
- VTX Antenna (typically two for dual-antenna systems)
- Avatar HD Digital FPV Camera (Nano)
- Avatar HD Digital VTX (Nano)



Image: Overview of the Walksnail Avatar HD Digital FPV System VTX (Nano) Kit components.



Image: Another perspective of the Walksnail Avatar HD Digital FPV System VTX (Nano) Kit components.

SETUP

Proper installation of the Avatar HD Digital FPV System is crucial for optimal performance. Follow these steps for setup:

- Mounting the VTX:** The VTX is designed with a single board and a 25.5x25.5mm mounting hole distance, making it suitable for various drone frames. Secure the VTX firmly to your drone's frame using appropriate screws and standoffs. Ensure proper airflow around the VTX for heat dissipation.
- Connecting the Camera:** Connect the Avatar HD Digital FPV Camera to the VTX using the provided coaxial cable. Ensure the connection is secure. The camera's dimensions are 14x14x17mm (Nano) or 19x19x22mm (Avatar camera), allowing for flexible mounting options.
- Attaching Antennas:** Connect the two VTX antennas to the designated U.FL connectors on the VTX module. Ensure they are securely fastened. Position the antennas to maximize signal reception and transmission, typically away from carbon fiber or other conductive materials. The antennas are polar (LHCP) and operate in the 5.6GHz-5.9GHz band.
- Power Connection:** Connect the VTX to a power source within the specified voltage range of 6V-25.2V. Refer to your drone's flight controller or power distribution board (PDB) for appropriate power pads. Incorrect voltage can damage the unit.
- Firmware Update (Optional):** It is recommended to check the official Walksnail website for the latest firmware updates for both the VTX and camera. Use the provided USB cable to connect the VTX to your computer for firmware flashing if necessary.



Image: Illustration of the VTX's single board design and mounting hole dimensions, highlighting its lightweight nature.

OPERATING INSTRUCTIONS

Once the Avatar HD Digital FPV System is installed and powered, you can begin operation:

- Power On:** Ensure your FPV goggles (e.g., Avatar Goggles, Fat Shark Dominator HD) are powered on and set to the correct frequency channel. Power on your drone, which will also power the VTX.
- Channel Pairing:** The system supports 8 channels. Refer to your goggles' manual for pairing instructions with the Avatar HD system. The system is designed for stable and powerful signals over a 4km range thanks to its dual-antenna design.
- Video Transmission:** The Avatar HD system uses H.265 encoding to provide 1080p/60fps or 720p/120fps FPV image quality with ultra-low latency (average 22ms in high frame rate mode). Adjust camera settings via OSD (On-Screen Display) if supported by your flight controller (Betaflight supported, Canvas mode available).
- Recording Flight Video:** The VTX features 8GB of built-in storage, allowing you to record 1080p or 720p HD flight videos directly without external interference. To access recorded footage, connect the VTX to your computer via the USB cable. The video capture format is MP4.



Image: Visual representation of the system's high-definition video capabilities and extended range provided by dual antennas.



Image: Demonstrates the benefit of 8GB built-in storage for recording and the clarity of HD 1080p OLED displays (relevant for compatible goggles).

MAINTENANCE

To ensure the longevity and optimal performance of your Walksnail Avatar HD Digital FPV System, follow these maintenance guidelines:

- **Keep Clean:** Regularly clean the camera lens and VTX module to prevent dust and debris buildup. Use a soft, dry cloth. Avoid abrasive materials or harsh chemicals.
- **Inspect Connections:** Periodically check all cable connections (camera, antennas, power) for looseness or damage. Secure any loose connections to prevent signal loss or power interruptions.
- **Heat Management:** Ensure the VTX has adequate ventilation during operation. Avoid covering the VTX, especially during prolonged use, to prevent overheating.
- **Antenna Care:** Handle antennas carefully. Bent or damaged antennas can significantly reduce signal range and quality.
- **Storage:** When not in use, store the kit in a dry, cool place, away from direct sunlight and extreme temperatures.

TROUBLESHOOTING

If you encounter issues with your Avatar HD Digital FPV System, consider the following troubleshooting steps:

- **No Video Signal:**
 - Verify that the VTX is receiving power (6V-25.2V).
 - Check the camera cable connection to the VTX.
 - Ensure your FPV goggles are on the correct channel and are compatible with the Avatar HD system.
 - Inspect antennas for damage and ensure they are securely connected.
- **Poor Video Quality/Interference:**
 - Check for physical obstructions between your drone and goggles.
 - Ensure antennas are properly oriented and not obstructed by carbon fiber or other materials.
 - Try changing channels on your goggles to avoid interference from other devices.
 - Ensure the VTX is not overheating.
- **Recording Issues:**
 - Verify that there is sufficient free space on the 8GB built-in storage.
 - Ensure the recording function is activated (if applicable, via OSD or button).
 - Check the USB connection when attempting to transfer files to a computer.

If the issue persists after attempting these steps, please refer to the official Walksnail support resources or contact customer service.

SPECIFICATIONS

Detailed technical specifications for the Walksnail Avatar HD Digital FPV System VTX (Nano) Kit:

Category	Specification
Model	Avatar Nano Kit
Manufacturer	Walksnail
Item Model Number	ce05c771-fcf0-4c40-a3f7-dbb4b73bb9bc
Manufacturer Part Number	WN04-6009S
Item Weight	2.08 ounces (approx. 59g)

Category	Specification
Package Dimensions	6.1 x 2.64 x 1.06 inches
Special Features	4km Range
Photo Sensor Technology	CMOS
Video Capture Resolution	1080p
Maximum Focal Length	30 Millimeters
Maximum Aperture	3.5 f
Flash Memory Type	Micro SD (for built-in storage)
Video Capture Format	MP4
Supported Audio Format	AAC
Screen Size (Goggles)	5 Inches (referring to compatible goggles)
Connectivity Technology	USB
VTX Weight	16g
VTX Mounting Holes	25.5x25.5mm
Operating Temperature	-20~40°C
Channels	8
Wide Power Input	6V-25.2V
Supported FC System	Betaflight
OSD	Canvas mode
Latency	Average delay 22ms
Antenna Type	Polar antenna (LHCP)
Antenna Bandwidth	5.6GHz-5.9GHz
Antenna Gain	2dBi
Antenna Radiation Efficiency	>98%
Antenna VSWR	≤1.4
Antenna Connector	U.FL
Antenna Line Length	90mm
Antenna Dimensions	H105mm*R11.2mm
Antenna Weight	1.5g
Camera Image Sensor	1/2.7 Inch
Camera Resolution	1080p/60fps, 720p/120fps, 720p/60fps
Camera Ratio	16/9, 4/3
Camera Lens	2.1mm
Camera Aperture	F2.0

Category	Specification
Camera Shutter	Rolling shutter
Camera Min. Illumination	0.001Lux
Camera Weight	3.5g (Nano) / 6g (Avatar camera)
Camera Dimensions	14x14x17mm (Nano) / 19x19x22mm (Avatar camera)
Camera Coaxial Cable	90mm / 140mm

Image: Comprehensive table outlining the technical specifications of the Avatar HD Digital FPV Kit components.

WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries regarding your Walksnail Avatar HD Digital FPV System VTX (Nano) Kit, please contact Walksnail customer support directly. Refer to the official Walksnail website for the most up-to-date contact details and support resources.

It is recommended to register your product on the manufacturer's website, if applicable, to receive important updates and support notifications.

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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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