HAPPYMODEL OVX300

HAPPYMODEL OVX300/OVX303 OpenVTX Instruction Manual

Model: OVX300, OVX303 | Brand: HAPPYMODEL

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your HAPPYMODEL OVX300 or OVX303 OpenVTX video transmitter. The OVX300/OVX303 is a compact 5-8G 40-channel video transmitter designed for FPV (First Person View) applications, featuring OpenVTx firmware for flexible control.

2. Safety Information

- Always ensure correct polarity when connecting power to avoid damage to the VTX and other components.
- Operate the VTX within its specified voltage range (DC 5V).
- Avoid touching the VTX during operation, especially at higher power outputs, as it may become hot.
- Ensure proper ventilation to prevent overheating.
- Professional installation is recommended for optimal performance and safety.
- Do not operate the VTX without an antenna connected, as this can cause permanent damage.

3. Product Overview

The HAPPYMODEL OVX300/OVX303 is a high-performance 5-8G 40-channel video transmitter. It comes preloaded with OpenVTx firmware, offering support for both SmartAudio and Tramp protocols. This allows for seamless integration and control via your flight controller, with automatic protocol detection upon power-up. Its nano size and stable power output make it suitable for various FPV drone builds.

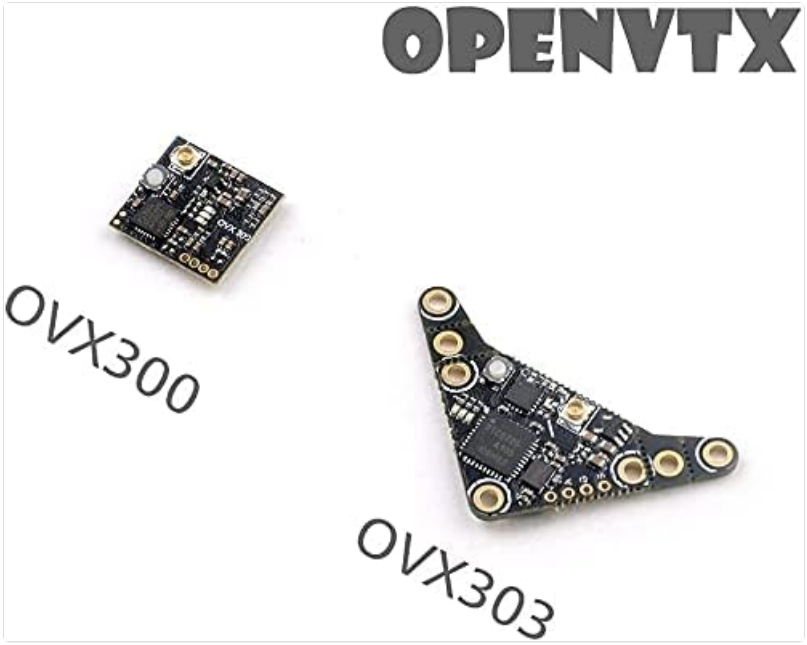
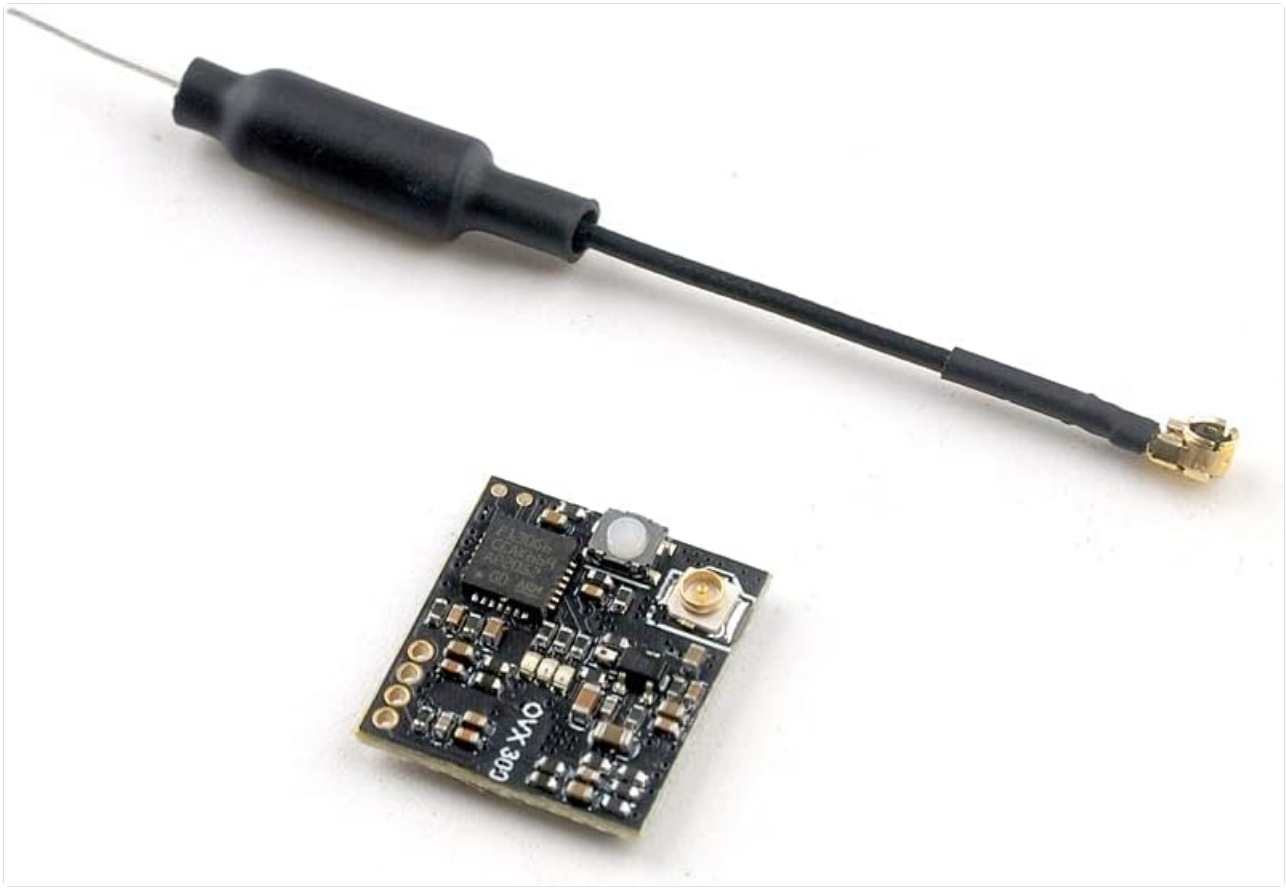


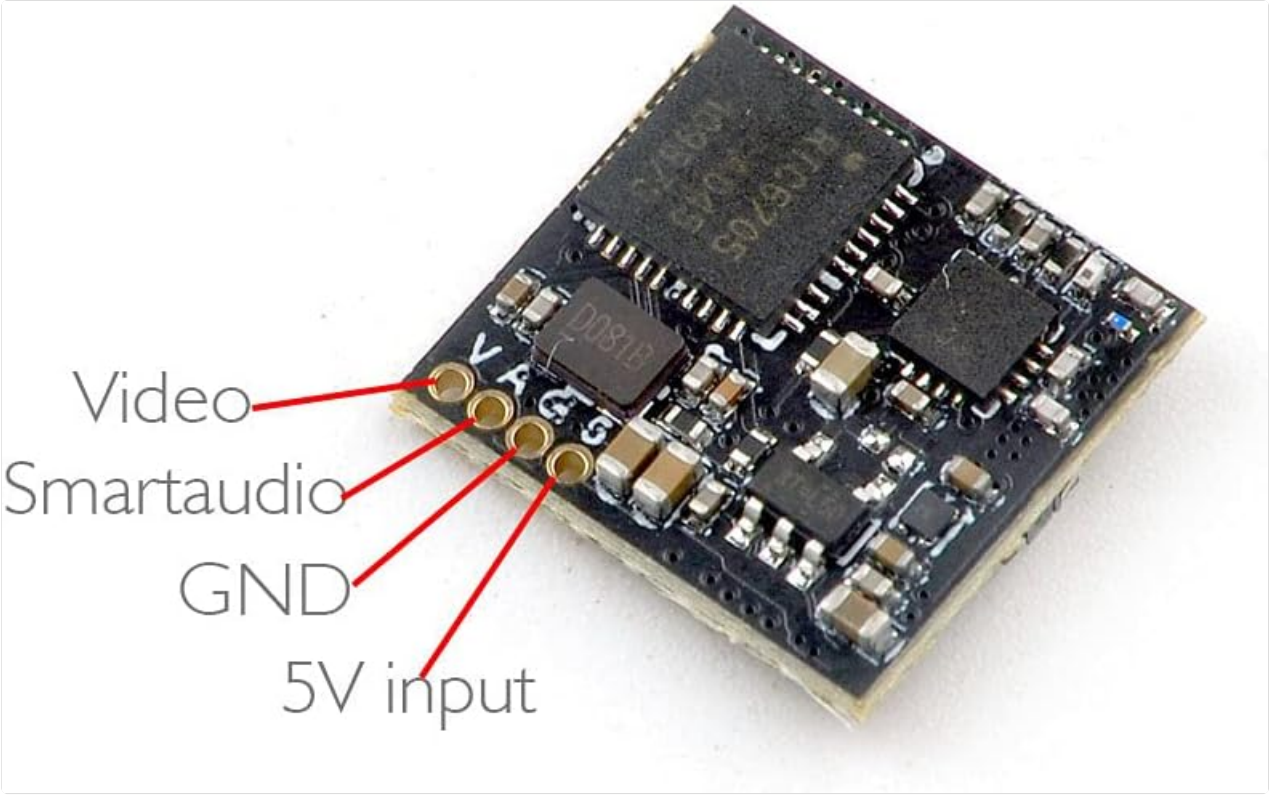
Image showing both the OVX300 and OVX303 video transmitters, highlighting their compact design.



Front view of the HAPPYMODEL OVX300 OpenVTX module.

4. Setup

4.1 Wiring Diagram



Detailed image of the OVX300 VTX showing pinout for Video, SmartAudio, GND, and 5V input.

Refer to the image above for the pinout configuration. Connect the VTX to your flight controller and camera as follows:

- **Video:** Connect this pad to the video output of your FPV camera or the video input pad on your flight controller.
- **SmartAudio:** Connect this pad to a UART TX pad on your flight controller for VTX control (SmartAudio or Tramp protocol).
- **GND:** Connect this pad to a ground (GND) pad on your flight controller or power distribution board.
- **5V input:** Connect this pad to a stable 5V DC power source from your flight controller or BEC.

4.2 Power Supply

The VTX requires a stable DC 5V power supply. Ensure your power source can provide sufficient current, typically less than 650mA when the VTX is operating at its maximum 300mW output power.

4.3 Mounting

The OVX303 model offers versatile mounting options with standard center distances of 16mmx16mm, 20mmx20mm, and 25.5mmx25.5mm. Choose the appropriate mounting pattern for your drone frame. Ensure the VTX is securely mounted and isolated from vibrations.

5. Operating Instructions

5.1 Protocol Detection

The OpenVTx firmware automatically detects the communication protocol (SmartAudio or Tramp) used by your flight controller upon VTX power-up. This eliminates the need for manual protocol selection on the VTX itself.

5.2 Transmitting Power Adjustment

The VTX supports several transmitting power levels: 0mW (Pit Mode), RCE (Race), 25mW, 100mW, and 300mW.

These settings are typically adjusted through your flight controller's OSD (On-Screen Display) or a dedicated VTX control menu within the flight controller software (e.g., Betaflight Configurator), utilizing the detected SmartAudio or Tramp protocol.

5.3 Channel and Band Selection

Similar to power adjustment, the selection of video channels and bands is managed via your flight controller's OSD or VTX control interface. Ensure your FPV receiver is set to the same channel and band as the VTX for a clear video signal.

6. Maintenance

- Keep the VTX clean and free from dust, dirt, and moisture. Use a soft, dry brush or compressed air for cleaning.
- Regularly inspect all solder joints and connections for any signs of damage or corrosion.
- Ensure the antenna is always securely connected before powering on the VTX.
- Avoid exposing the VTX to extreme temperatures or direct sunlight for prolonged periods.
- Provide adequate airflow around the VTX, especially when operating at higher power settings, to dissipate heat effectively.

7. Troubleshooting

7.1 No Video Signal

- Verify all wiring connections (Video, GND, 5V input) are secure and correctly made according to the wiring diagram.
- Check the power supply to the VTX. Ensure it is receiving a stable 5V.
- Confirm your FPV camera is functioning correctly and its video output is connected to the VTX.
- Ensure the VTX is powered on and not in Pit Mode (0mW output).
- Verify your FPV receiver is on the correct channel and band.

7.2 Poor Video Quality / Interference

- Check the antenna connection on the VTX and ensure it is securely attached and undamaged.
- Ensure the VTX channel and band precisely match your FPV receiver's settings.
- Relocate the VTX if it is too close to other electronic components that may cause electromagnetic interference.
- Consider reducing transmitting power if operating in close proximity to other FPV pilots to minimize interference.
- Inspect the video cable for damage or poor shielding.

7.3 VTX Not Responding to Flight Controller

- Verify the SmartAudio/Tramp connection between the VTX and the flight controller.
- Ensure the correct UART is configured for VTX control in your flight controller firmware (e.g., Betaflight Configurator).
- Confirm that the VTX protocol (SmartAudio or Tramp) is correctly selected or auto-detected by the flight controller software.

8. Specifications

Model	OVX300 / OVX303
Brand	HAPPYMODEL
Transmitting Power	0mW (Pit Mode), RCE (Race), 25mW, 100mW, 300mW
Frequency	5-8G (5.8GHz)
Channels	40CH
Power Supply	DC 5V
Current (5V)	<650mA (at 300mW)
Firmware	OpenVTx (SmartAudio, Tramp protocol support)
Mounting Holes (OVX303)	16mmx16mm, 20mmx20mm, 25.5mmx25.5mm
Material	Plastic
Color	Black

9. Warranty and Support

For warranty claims, technical assistance, or further product information, please contact your original retailer or the HAPPYMODEL manufacturer directly. Please refer to your purchase documentation for specific warranty terms and conditions.
Additional resources and product information may be available on the official HAPPYMODEL store:

Visit the HAPPYMODEL Store