GalaxyElec RAD VTX 5.8G 1.6W

GalaxyElec RAD VTX 5.8G 1.6W Adjustable Video Transmitter User Manual

Model: RAD VTX 5.8G 1.6W

1. INTRODUCTION

The GalaxyElec RAD VTX 5.8G 1.6W is a high-power video transmitter designed for FPV long-range drone applications. It features a maximum output power of 1600mW with five adjustable power levels: PIT mode, 25mW, 200mW, 600mW, and 1600mW. The VTX incorporates a double-layer PCB design to minimize interference and enhance heat dissipation. It includes a built-in microphone, supports a wide input voltage range of 7-36V (2-8S battery), utilizes an MMCX antenna connector, and has a 30.5x30.5mm mounting hole.

Figure 1: Overview of the GalaxyElec RAD VTX 5.8G 1.6W Video Transmitter.

2. FEATURES

- 1600mW maximum output power for long-range flight stability.
- Five adjustable power levels: PIT mode, 25mW, 200mW, 600mW, 1600mW.
- Double-layer PCB structure for improved cooling and reduced signal interference.
- Integrated temperature control protection to prevent overheating damage.
- Wide input voltage support: DC 7-36V (compatible with 2-8S batteries).
- IRC Tramp control protocol for OSD parameter adjustment.
- Built-in microphone for real-time audio transmission.
- Three regional frequency tables: Universal (40CH), American FCC (37CH), European EU (26CH).
- Two function buttons and three indicator lights for easy control.
- Standard 30.5x30.5mm (M3) mounting hole.

3. SPECIFICATIONS

- **Model:** RAD VTX 5.8G 1.6W
- **Input Voltage:** DC 7-36V (2-8S Battery)

- **Output (for Camera):** 5V@600mA
- **Input Impedance:** 75Ω
- **Protocol:** IRC Tramp
- **Antenna Interface:** MMCX
- **Output Power:** PIT mode / 25mW / 200mW / 600mW / 1600mW
- **Frequency Tables:** Universal (40CH), American FCC (37CH), European EU (26CH)
- **Video Format:** PAL / NTSC
- **Microphone:** Built-in
- **Dimensions:** 36×36.5×5.5mm
- **Weight:** 9.7g (without cable)
- **Mounting Hole:** 30x30mm (M3)

Figure 2: Physical dimensions of the RAD VTX.

4. SETUP AND INSTALLATION

4.1 Antenna Connection

Connect a 5.8G antenna to the MMCX socket on the VTX. Ensure the antenna is securely attached before powering on the VTX. Operating the VTX without an antenna can cause permanent damage.

4.2 Power and Signal Wiring

Connect the VTX to your flight controller or power distribution board using the GH 1.25 6P connector. Refer to the pinout diagram below for correct connections:

- **DC 7-36V:** Connect to your main battery voltage (2-8S).
- **GND:** Ground connection.
- **VIDEO:** Video signal input from your camera.
- **IRC:** IRC Tramp control signal from your flight controller.
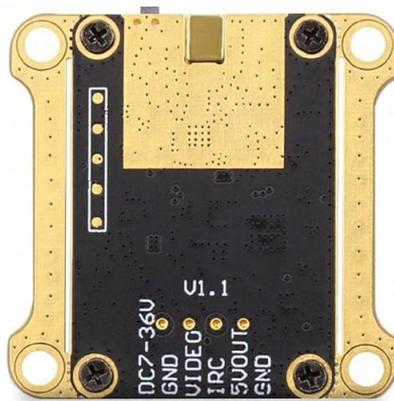- **5VOUT:** 5V output for powering a camera (maximum 600mA).

Figure 3: Bottom view of the VTX showing pinout for wiring connections.

4.3 Mounting

Secure the VTX using the 30x30mm (M3) mounting holes. Ensure adequate airflow around the unit for heat dissipation.

4.4 Optional Separation

The VTX features a separable design along a dotted line, allowing for a more compact installation if required. Carefully separate the board along the indicated line as shown in the figures below.

Figure 4: RAD VTX showing the dotted line for optional separation.

◀◀◀ Separated along dotted line ▶▶▶

Figure 5: The RAD VTX after separation.
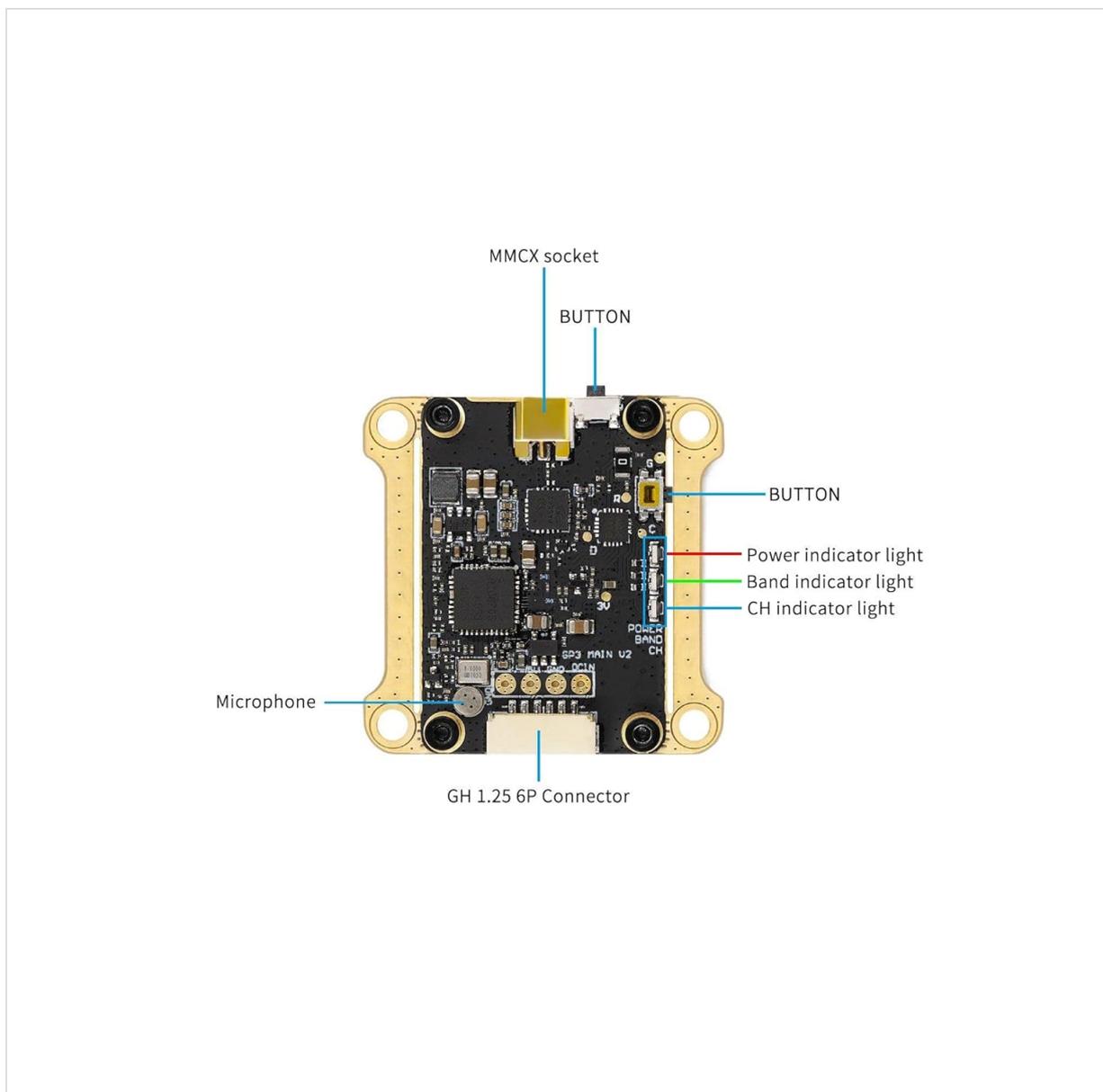
5. OPERATING INSTRUCTIONS

Figure 6: Top view of the VTX with labeled components.

5.1 Power On

After connecting the VTX and antenna, power on your drone. The indicator lights on the VTX will illuminate.

5.2 Power Level Adjustment

Use the **Power Button** (refer to Figure 6) to cycle through the five available power levels: PIT mode, 25mW, 200mW, 600mW, and 1600mW. The power indicator light will change or blink to indicate the currently selected power level.

5.3 Band and Channel Selection

Use the **Channel Button** (refer to Figure 6) to cycle through bands and channels. The band and channel indicator lights will display the current selection.

- **Short press:** Changes channels within the current band.
- **Long press:** Changes to the next available band.

5.4 IRC Tramp Control

For advanced configuration, connect the IRC pin to your flight controller. You can then use Betaflight OSD or a similar interface to adjust VTX settings, including power, band, and channel, directly from your FPV goggles or ground station.

5.5 Frequency Tables

The VTX supports Universal (40CH), American FCC (37CH), and European EU (26CH) frequency tables. Ensure you select the appropriate frequency table for your region to comply with local regulations.

6. MAINTENANCE AND WARNINGS

To ensure optimal performance and longevity of your RAD VTX, observe the following:

- **Antenna Connection:** Always connect an antenna before powering on the VTX. Operating the VTX without an antenna can cause permanent damage.
- **Cooling:** The VTX generates heat during operation, especially at higher power levels. Provide constant airflow and ensure a well-ventilated environment. Consider installing a cooling fan if operating in enclosed spaces or at maximum power for extended periods.
- **Cleanliness:** Keep the VTX free from dust, dirt, and moisture.
- **Voltage:** Adhere to the specified input voltage range of DC 7-36V. Exceeding this range can damage the unit.

7. TROUBLESHOOTING

If you encounter issues with your RAD VTX, consider the following general troubleshooting steps:

- **No Video Signal:** Check all wiring connections, especially power, ground, and video input. Ensure the antenna is securely connected. Verify that the VTX is powered on and the correct channel/band is selected on both the VTX and your FPV receiver.
- **Poor Video Quality:** Check for interference sources. Ensure the antenna is not damaged. Verify power supply stability.
- **Overheating:** Ensure adequate airflow. Reduce power output if operating in a confined space.

For persistent issues, consult online FPV communities or the manufacturer's support resources.

8. WARRANTY AND SUPPORT

Specific warranty information for the GalaxyElec RAD VTX 5.8G 1.6W is typically provided at the point of purchase or on the manufacturer's official website. For technical support, product updates, or warranty claims, please refer to the contact information provided by your retailer or the GalaxyElec manufacturer.