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SPEEDY BEE TX800

SpeedyBee TX800 FPV VTX Instruction Manual

Comprehensive guide for setting up, operating, and maintaining your SpeedyBee TX800 FPV VTX, featuring adjustable power output and IRC Tramp Protocol support.

1. Key Features

- **Adjustable Power Output:** 5.8GHz 48CH PIT / 25mW / 200mW / 400mW / 800mW switchable.
- **High-efficiency Heat Sink:** Designed for optimal thermal performance.
- **IRC Tramp Protocol Support:** Allows modification of image transmitter parameters via remote control or SpeedyBee App.
- **Pit Mode Support:** Enables powering up your drone for adjustments without transmitting a strong video signal, preventing interference with other pilots.
- **Side LED Indicators:** Three color LEDs provide intuitive status for channel, band, and power.
- **Simple Installation:** 20x20mm mounting hole distance for convenient stacking with other electronics.

2. Package Contents

The SpeedyBee TX800 package typically includes the following items:

- 1 x SpeedyBee TX800 VTX Module
- 1 x MMCX Antenna
- 1 x MMCX to SMA Cable
- 1 x 1.0mm 4pin Cable (JST Connector)

Image: SpeedyBee TX800 package contents, including the VTX, antenna, and cables.

3. Setup and Installation

3.1. Physical Dimensions and Mounting

The SpeedyBee TX800 is designed for compact installations with a 20x20mm mounting hole pattern. The VTX module itself is small and includes a removable heat sink for thermal management.

Image: SpeedyBee TX800 module with dimensions indicating a 28mm x 28mm footprint and 20mm mounting holes.

3.2. Wiring Connections

The TX800 requires a 5V 1A BEC (Battery Eliminator Circuit) for power, with an input voltage range of 3.7V to 5.5V. Connections can be made using the included JST connector cable or by soldering directly to the pads.
JST Connector Pinout (Left to Right):

- 5V Input
- Ground (GND)
- IRC (for IRC Tramp Protocol communication)
- Video In

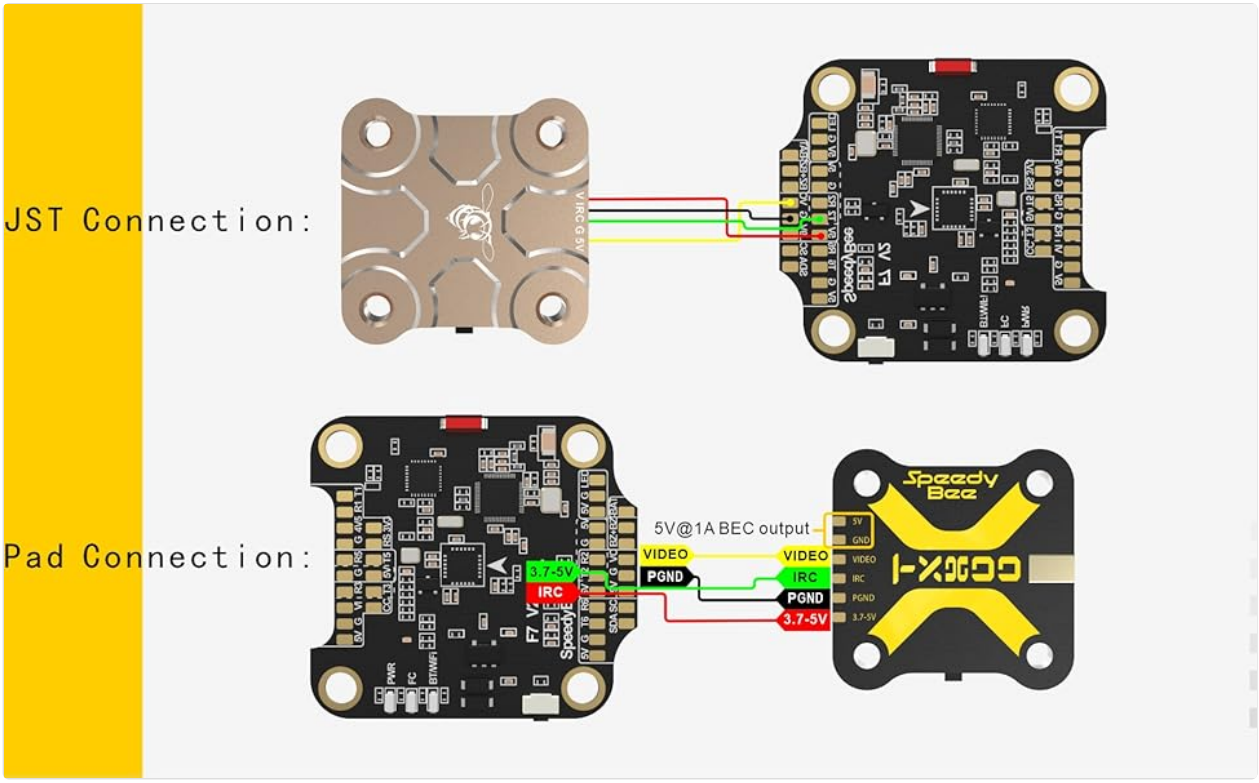

Image: Detailed wiring diagram showing both JST connector and soldering pad connections for the SpeedyBee TX800 VTX to a flight controller.

3.3. Antenna Connection

Connect the provided MMCX antenna or the MMCX to SMA adapter with your preferred SMA antenna to the MMCX port on the VTX. Ensure a secure connection before powering on the device.

Image: Front view of the SpeedyBee TX800 VTX module, showing the MMCX antenna connector on the side.

3.4. Betaflight Configuration for IRC Tramp Protocol

To enable remote control and app support for VTX parameter modification, configure your flight controller in Betaflight:

1. Connect your flight controller to Betaflight Configurator.
2. Navigate to the **Ports** tab.
3. Identify the UART port connected to the VTX's IRC line and enable **VTX (IRC Tramp)** under the Peripherals column for that UART.
4. Go to the **Video Transmitter** tab. Here you can set the band, channel, and power levels.
5. Ensure the VTX is unlocked if it was initially locked to 25mW. Refer to the manufacturer's official documentation for specific unlocking procedures.

4. Operating Instructions

4.1. Power Output Adjustment

The SpeedyBee TX800 offers multiple power output options: PIT, 25mW, 200mW, 400mW, and 800mW. These can be adjusted via your FPV remote control (using the IRC Tramp Protocol) or through the SpeedyBee mobile application. Select the appropriate power level based on your flying environment and regulatory requirements.

4.2. Pit Mode Functionality

Pit Mode allows you to power up your drone for maintenance or adjustments without transmitting a full-power video signal. This prevents interference with other pilots in the vicinity. Activate and deactivate Pit Mode as needed through your remote control or the SpeedyBee App.

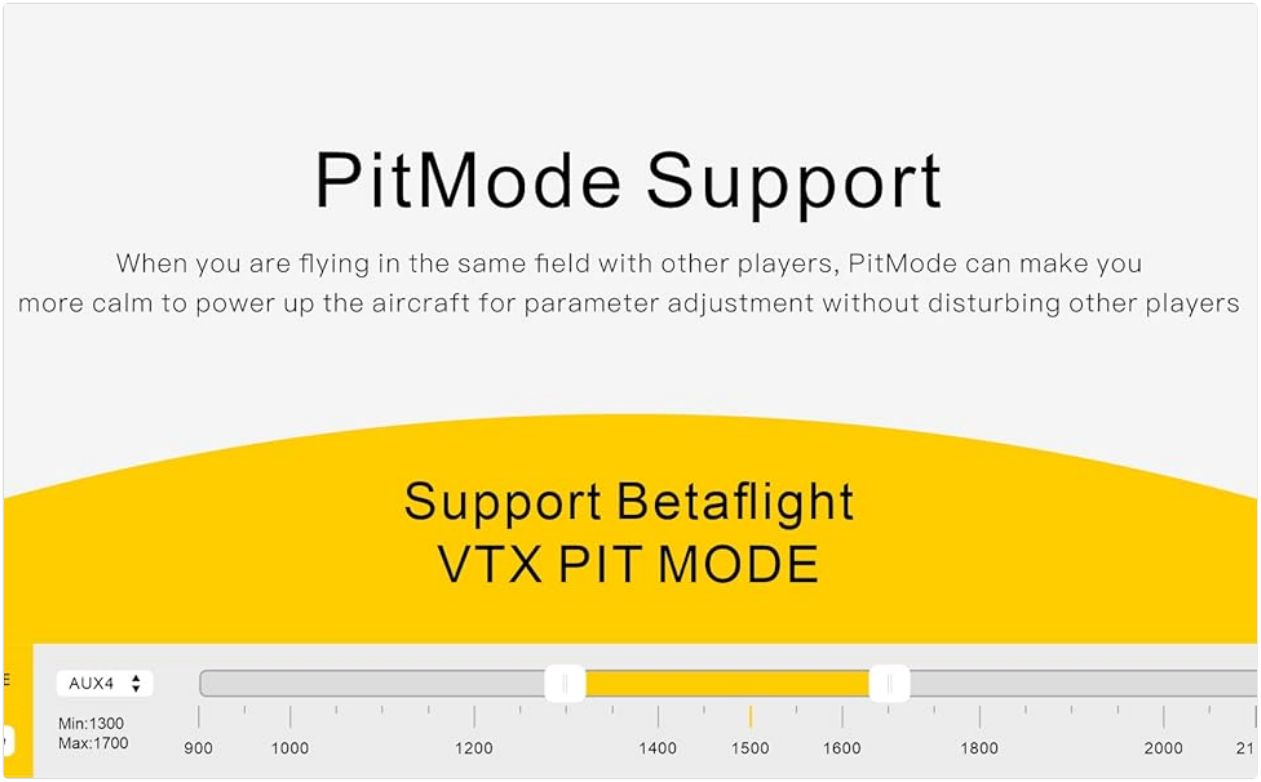

Image: Illustration demonstrating the concept of Pit Mode support for the SpeedyBee TX800, allowing low-power operation.

4.3. LED Indicator Interpretation

The side LED indicators provide visual feedback on the VTX's current status:

- **Blue LED:** Indicates the selected channel.
- **Red LEDs (6):** Indicate the selected band.
- **Orange LED:** Indicates the current power output level.

Refer to the VTX's detailed manual or the SpeedyBee App for specific LED patterns corresponding to different settings.

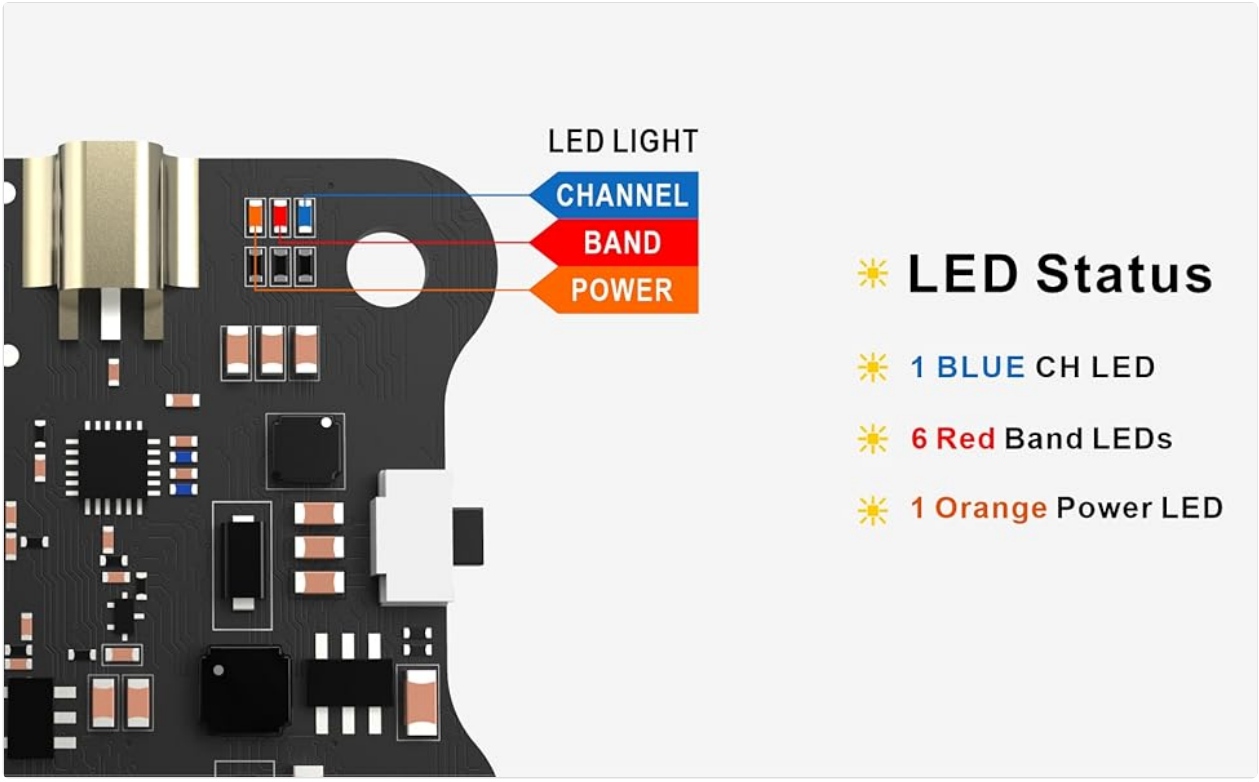

Image: Diagram illustrating the location and function of the LED indicators on the SpeedyBee TX800 for channel, band, and power status.

5. Maintenance

- **Heat Management:** When operating the TX800 at higher power outputs (e.g., 400mW, 800mW), it is crucial to ensure adequate airflow around the VTX and proper installation of the heat sink to prevent overheating. Prolonged overheating can lead to reduced performance or damage.
- **Antenna Care:** Always ensure the MMCX antenna is securely connected before powering on the VTX. Operating the VTX without an antenna can cause permanent damage to the transmitter. Inspect the antenna and connectors regularly for any signs of wear or damage.
- **Cleaning:** Keep the VTX module free from dust, dirt, and moisture. Use a soft, dry brush or compressed air to gently clean the unit. Avoid using liquids or harsh chemicals.

6. Troubleshooting

- **No Video Signal:**
  - Verify all wiring connections (power, ground, video in) are correct and secure.
  - Ensure the VTX is receiving proper 5V power from a 1A BEC.
  - Confirm the VTX is not in Pit Mode.
  - Check that the selected channel and band on your FPV goggles/monitor match the VTX settings.
  - If the VTX was initially locked to 25mW, ensure it has been properly unlocked according to manufacturer instructions.
- **Poor Video Quality / Excessive Static:**
  - Inspect antenna connections on both the VTX and your FPV receiver for tightness and damage.
  - Ensure the VTX antenna is suitable for 5.8GHz operation.
  - Increase the VTX power output if flying at a distance or through obstacles.

- Check for potential electromagnetic interference from other components on your drone (e.g., ESCs, motors). Ensure proper shielding and wire routing.
- Verify the VTX is not overheating, as this can degrade signal quality.

- **VTX Not Responding to Remote Control or App Commands:**
  - Confirm that the IRC Tramp protocol is correctly enabled on the flight controller's UART port in Betaflight.
  - Check the physical connection of the IRC signal wire between the VTX and the flight controller.
  - Ensure your remote control or SpeedyBee App is properly configured and linked to the flight controller for VTX control.

- **Overheating:**
  - Reduce the VTX power output.
  - Ensure the VTX has sufficient airflow and is not enclosed in a tight space.
  - Verify the heat sink is correctly installed and making good contact with the VTX module.

7. Specifications

Feature	Specification
Brand	SPEEDY BEE
Model Name	TX800
Input Power	3.7-5.5V (requires 5V 1A BEC)
Adjustable Power Output	PIT / 25mW / 200mW / 400mW / 800mW
Frequency	5.8GHz, 48 Channels
Mounting Hole Distance	20 x 20 mm
Antenna Connector	MMCX
Protocol Support	IRC Tramp
Item Weight	0.634 ounces
Package Dimensions	2.64 x 2.13 x 0.94 inches
Date First Available	July 26, 2021

8. Warranty and Support

For warranty claims, technical assistance, or further product information, please refer to the official SpeedyBee website or contact their customer service directly. It is recommended to retain your proof of purchase for any warranty-related inquiries.