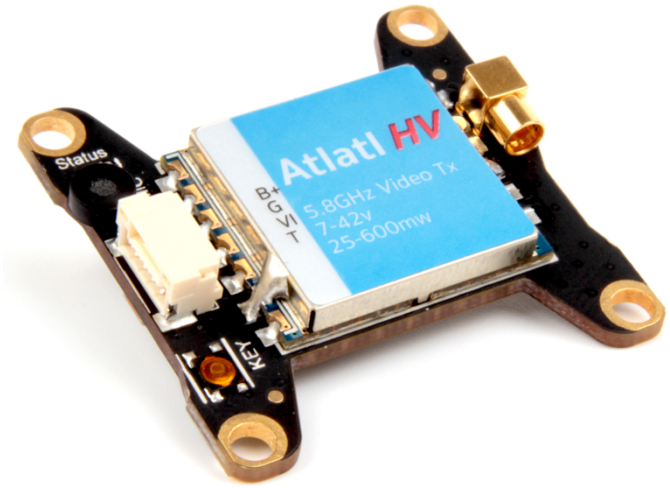
Holybro

Atlatl FPV
Video Transmitter



User Manual & Installation Guide

V1.0

Contents

Overview

Features

- Compatible with all major FPV receivers from vendors such as Fatshark, ImmersionRC, etc.
- Supports the standard 40-channel set: band A, B, E, Fatshark, and Raceband.
- Telemetry input allows remote control by the flight controller (where supported). Change channel, transmit power, and more from Betaflight OSD, flight controller USB port, Taranis, and more.
- Variable transmit power from 25 mW to 600 mW. Use 25 mW for a race and then easily switch to 600 mW for freestyle.
- Pit Mode allows you to power up safely without the risk of knocking other pilots out of the air.
- Mono audio input allows you to install a microphone, so you can listen to your motors while you fly, no matter how far away you fly.
- Standard 36mm form factor allows you to mount the Atlatl directly in your flight controller stack.

Specifications

- Output Power: 15 mW (pit mode), 25 mW, 100 mW, 200 mW, 400 mW, 600 mW
- Audio: 6 MHz + 6.5 MHz Mono
- Antenna Connector: MMCX
- Input Voltage: 7 to 42 volts (2-6S LiPo)
- Dimensions: 35x35x7mm
- Mounting Holes: Standard 30.5mm square to center of holes
- Weight: 10.8g

Warranty and Return Policy

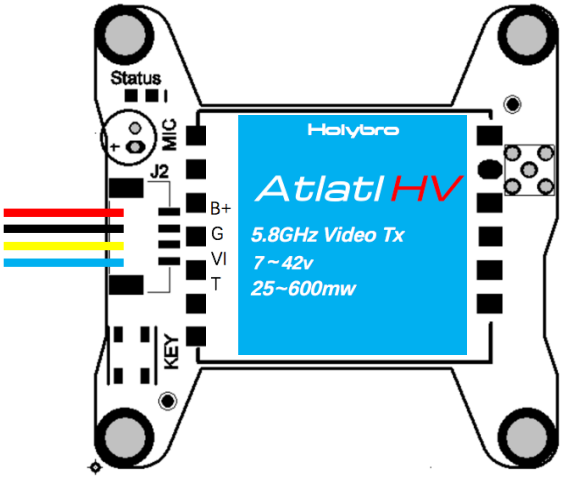
If you believe that your Atlatl is defective, please contact us. If we determine that the product is defective, it will be repaired or replaced at no charge to you. We may ask you to send your Atlatl to our service center for examination or repair. Shipping costs are your responsibility. Returned items should include the original packaging and all accessories.

If product is damaged or defective, we will repair or replace it. Refunds are only given when product is lost by the shipping company. The refund amount is limited to the price of the product. Shipping costs are never refundable.

Contact us at:

- Email: productservice@holybro.com
- Facebook Page: Holybro
- Facebook Group: Holybro Shuriken Owner Group

Pinout Diagram and Channel Table



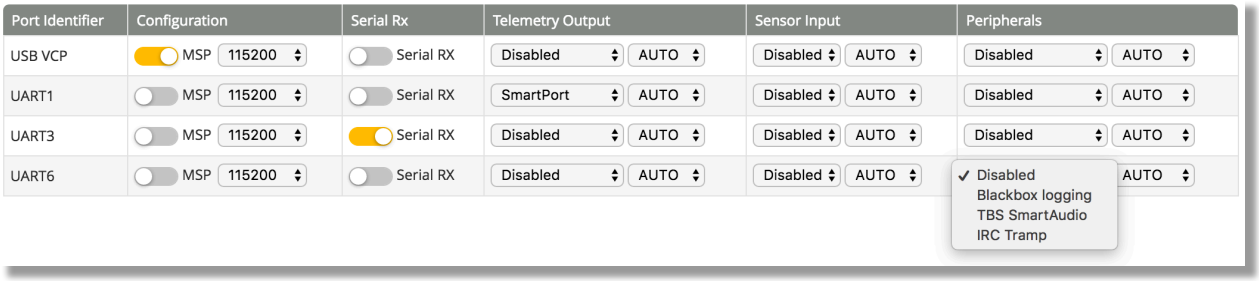
Pin	Color	Function
B+	Red	Input Voltage (7-42 volts)
G	Black	Ground
VI	Yellow	Video In (from camera)
T	Blue	Telemetry Input
Mic+		Mic input

		1	2	3	4	5	6	7	8
A	Band A	5865	5845	5825	5805	5785	5765	5745	5725
B	Band B	5733	5752	5771	5790	5809	5828	5847	5866
E	Band E	5705	5685	5665	5645	5885	5905	5925	5945
F	IRC/FS	5740	5760	5780	5800	5820	5840	5860	5880
C	RaceBand	5658	5695	5732	5769	5806	5843	5880	5917

Installation Guide

The Atlatl is designed to be installed in your flight controller stack. It can be installed above or below your FC using the same type of M3 nylon standoffs that are used to mount the FC itself. Wiring up the Atlatl is not complicated.

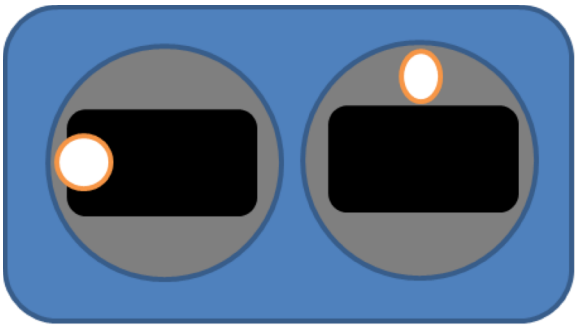
1. Insert the JST-GH connector into the receptacle on the Atlatl.
2. Solder the red wire to the voltage source for the Atlatl. The Atlatl can run off of battery voltage directly (7 to 42 volts, 2S to 6S). There is no need to run the Atlatl off of a voltage regulator.
3. Solder the black wire to a ground pad. Video noise will be minimized if you solder your Atlatl ground wire and your FPV camera's ground wire to the same pad. Twist them together and tin them before soldering them both to the same pad.
4. Connect the Atlatl's yellow wire to the video signal wire of your FPV camera. The camera's video wire will usually be yellow as well. You can directly solder the two wires together, or you might have a PDB or FC with a "Video In" and "Video Out" pad. In that case, solder the camera's video wire to "Video In" and the Atlatl's video wire to "Video Out".
5. The Atlatl can be remote-controlled using the ImmersionRC Tramp Telemetry protocol. This is the intended use of the Atlatl. To use this feature, solder the Atlatl's blue wire to the TX pad of the UART on your flight controller that will be used for this feature.
6. In Betaflight or Cleanflight, go to the Ports tab. Enable IRC Tramp protocol on the UART that you are using to remote-control the Atlatl (the UART whose TX pad you soldered the blue wire to).



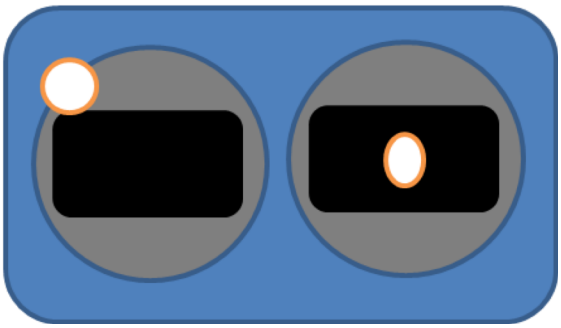
Using The OSD

If you are using a Betaflight Flight Controller with Betaflight OSD, you can manage the Atlatl's transmit power and channel from within the OSD.

Mode 2

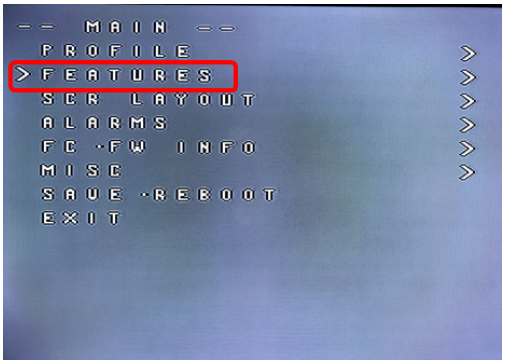


Mode 1

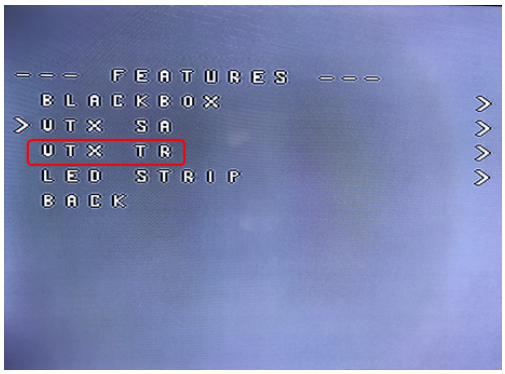


The graphics above show the stick command to bring up the OSD menu. The stick command is: throttle centered, yaw left, pitch forward. The exact stick command therefore depends on which mode your transmitter sticks are in.

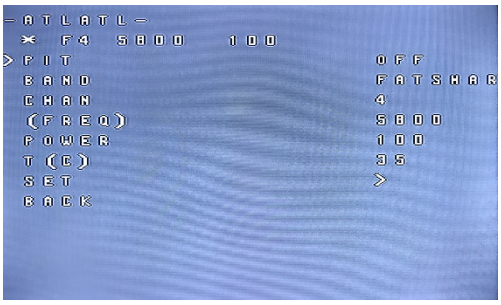
In the OSD menu, use pitch up/down to move the cursor between menu items. When a menu option has a > symbol to the right of it, this indicates that it contains a sub-menu. Roll-right will enter the sub-menu. For example, in the screen to the right, moving the cursor to "Features" and then moving the roll stick to the right will enter the "Features" sub-menu.



To manage the Atlatl, enter the "Features" menu to configure the vTX. From there, enter "VTX TR"



The screen to the right shows the current vTX settings. From here, you can change the frequency band, channel, and power level of the video transmitter. After making the changes, move the cursor to “Set” and press roll-right to confirm the settings.



Functions

Channel-Change Button

The Atlatl is intended to be configured via Telemetry. If you can't use Telemetry for some reason, you can change channels using the button on the Atlatl. Hold the button down for 2 seconds to switch from Telemetry to Button mode. Then press the button one time to change to the next channel. There is no separate "band" and "channel" function. The Atlatl will simply step through all 40 channels that it supports.

The button is intended only as a fallback option for when Telemetry is not available. It would be very tedious to use the button as the primary means of configuring the Atlatl.

Pit Mode

Have you ever powered up your copter, only to have one of your friends start shouting and crash? Your video transmitter was on the same channel he was on, or even a nearby channel, and your signal was so loud that it overpowered his own. This is commonly referred to as being "stomped on", and it's a big problem any time more than one person is flying together. Even if you are not on the same channel as somebody else, you can stomp on them if you are too close to them

Pit Mode helps to prevent you from stomping on other pilots. When the transmitter is in Pit Mode, it will only transmit at a very low power. Within a short distance, you will be able to see your own copter's transmission, but other pilots who are further away, won't be affected.

You can put the Atlatl into Pit Mode in two ways. First, you can use the Betaflight OSD. In the vTX control section of the OSD (shown in the previous pages), there is an option, "Pit", which can be on or off. Manually change this option to put the Atlatl into, and take it out of, pit mode.

You can also hold down the Atlatl's button while you plug in your battery. This will cause the Atlatl to power up in Pit Mode. If you're flying with friends, it's a good idea to make a habit of this, to ensure that you don't stomp on any of them when you power up. Just be sure to remember to take the Atlatl out of Pit Mode before you fly, or you will lose signal pretty much as soon as you fly away.

If you power up the Atlatl in Pit Mode, you can take it out of Pit Mode either by power cycling the board (un-plug and plug in your battery) or via the OSD.

The Atlatl's Pit Mode operates at 15 mW transmit power. This is low enough to reduce the chance of interfering with another pilot, but it's still high enough that pilots who are nearby could be affected. Always follow best practices for frequency assignment when flying with other pilots. Never power up near other pilots, even if you think the channel is clear. Never land your copter near to other pilots either. Always power up, take off, and land, at least 20-30 feet away from pilots who are flying.

Status LED

The LED on the Atlatl shows its status. Possible conditions are:

- Solid LED, not blinking – The Atlatl is being controlled by the button, NOT by Telemetry. You can switch channels by pressing the button one time to advance to the next channel. Hold the button down for two seconds to switch back to Telemetry control of the vTX.
- Blinks slowly, about once per second – The Atlatl is in Telemetry control mode and the telemetry communication with the FC is working.
- Blinks slowly, about once per three seconds – The Atlatl is in Telemetry control mode, but telemetry communication with the FC is not working. Possible causes include: wire is not connected, wire is connected to the wrong pin or pad on the FC, FC is not configured correctly.
- Blinks rapidly, about 4 times per second – The Atlatl is in Pit Mode. Make sure you don't take off and fly away in this mode, because your range will be very short!