

FAT SHARK RECON HD



WARNING: DO NOT leave the headset exposed to direct sunlight. Sunlight will magnify through the optics and burn holes in the display. Damage from sunlight will not be covered under warranty. Keep goggles in protective case when not in use.

WARNING: Always operate this product in a safe and responsible manner and observe local laws.

WARNING: The Recon HD by Fat Shark is not a toy. This product contains small parts and is intended to be operated by adults. Not for children under 14 years old.

Recon HD Digital Headset User Manual

Rev. 281122(DDMMYY)

THIS HEADSET INCLUDES

1	#1127 Recon HD Headset
1	Carrying Case
1	Head Strap
1	Lens Cleaning Cloth

BATTERY REQUIRED, NOT INCLUDED

1	Headset Battery
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RECON HD HEADSET SPECIFICATIONS

DISPLAY:

3.5 inch 60fps HD 1080p (1920 x 1080) TFT display

FIELD OF VIEW (FOV):

44°

HEADSET ADJUSTMENTS:

Inter-Pupillary Distance (IPD): 55–76mm (fixed)

HEADSET INTERFACE

- 2 top buttons (enter, record start/stop)
- 5 way switch (menu navigation)
- 1 bind button (recessed - insert tool to press)

HEADSET OUTPUT:

USB-C (HDMI)

INPUT POWER:

5.5mm Barrel Connector, 7–21V Center Pin Positive

SD CARD SLOT

Micro sized SD card reader for recording video and firmware updates

ANTIFOG FAN

Integrated

ANTENNAS

Four internal wide-beam width directional antennas

OPERATING FREQUENCIES:

5.725–5.850GHz

WEIGHT:

365.5 g

OPERATING TEMPERATURE:

32°–104°F (0°–40°C)

COMPATIBLE VIDEO TRANSMITTERS:

Walksnail Avatar Digital HD video transmitters



DIAGRAMS

Front View



Left Side View



Bottom View



USB-C (HDMI OUT)

Inside View



MICRO SD CARD SLOT

VIDEO DISPLAY



Right-side view



BUTTON CONTROLS

5-WAY SWITCH

Press the 5-way switch in the center, or up/down/left/right for different functions from the button.

Insert a small tool into the hole to access the bind button.



Button	Input	Action	
Back	Short press	Back one level	Escape
Record	Short press	Start/stop video recording	
5-Way Switch	Press center	Enter	Pause/play
	Press up	Menu up	
	Press down	Menu down	
	Press left	Menu left	
	Press right	Menu right	

BINDING

Binding is the process of pairing the video goggles with the video transmitter. You will need to complete the binding process in order for the goggles to receive video from the transmitter. You can bind multiple transmitters to the same set of goggles.

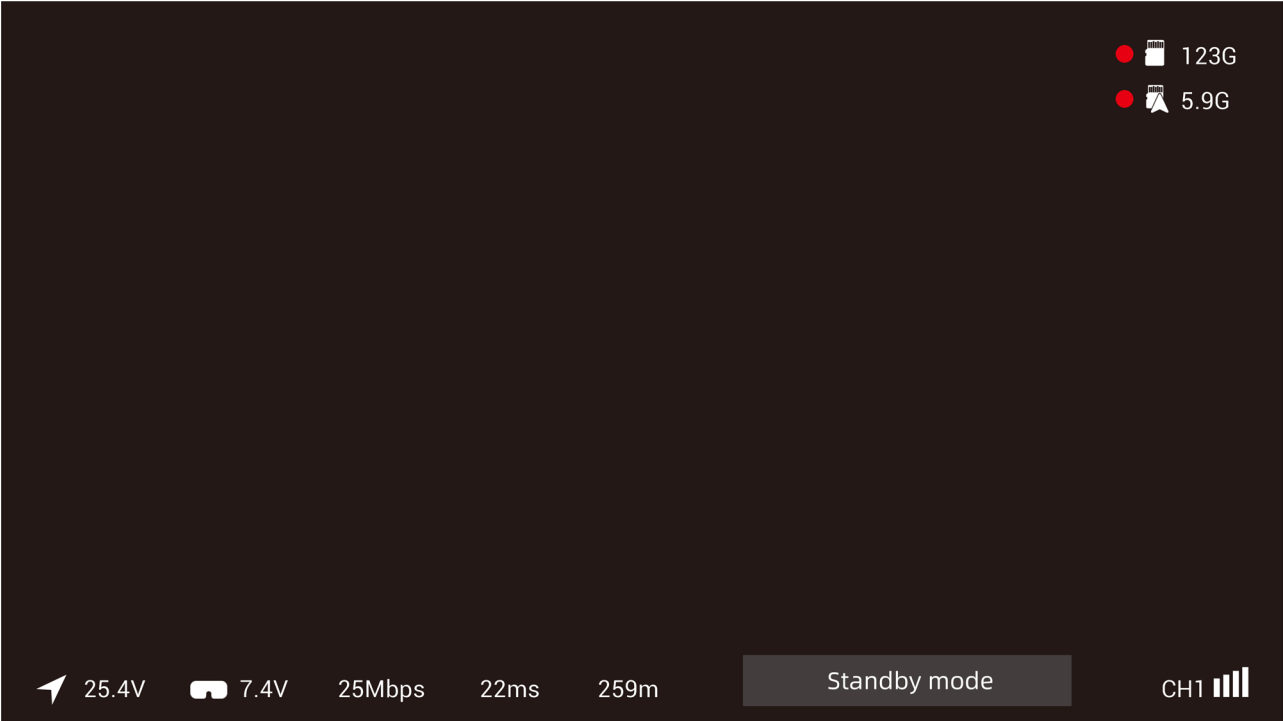
1. Power ON the goggles. Wait for the goggles to display the main standby screen.
2. Power ON the video transmitter. Wait for the LED to blink green.
3. Press the bind button on the video transmitter, the LED on the video transmitter turns red.
4. Use a tool to press the bind button on the goggles; they will beep to indicate bind mode.
5. When binding is complete, the goggles will stop beeping and the LED on the transmitter will turn green.

After binding the video transmitter will operate under these conditions

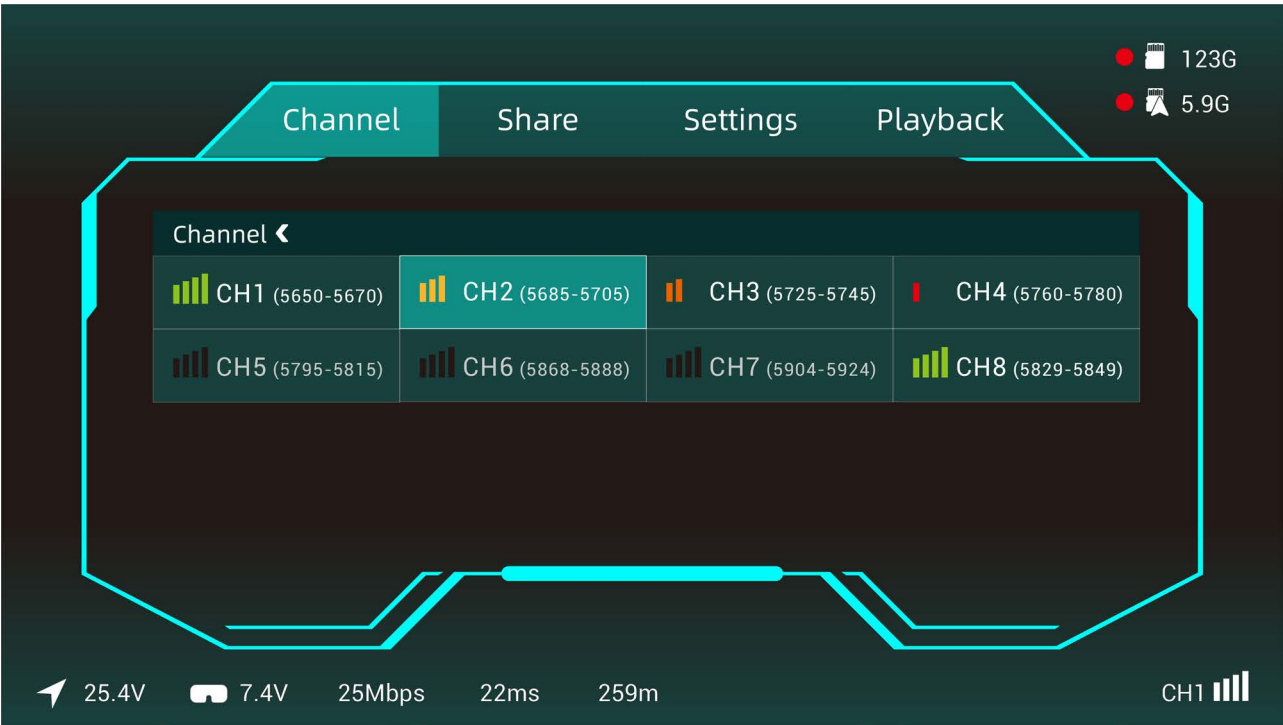
- The transmitter will not send a video signal unless the goggle it is bound to is turned on.
- The transmitter will power up and transmit on the channel selected at the goggle.
- By default, the Public Channel will be selected. This channel should not be used for flying your drone and should only be used to select a channel for operation.
- The system may prevent you from selecting channels currently in use by other pilots.
- Once you have selected a channel, the goggle and transmitter will go to your selected channel on future power ups.
- If your previously selected channel is occupied by another pilot while your system is not powered up, the system may default back to Public Channel and prompt you to pick a different channel.



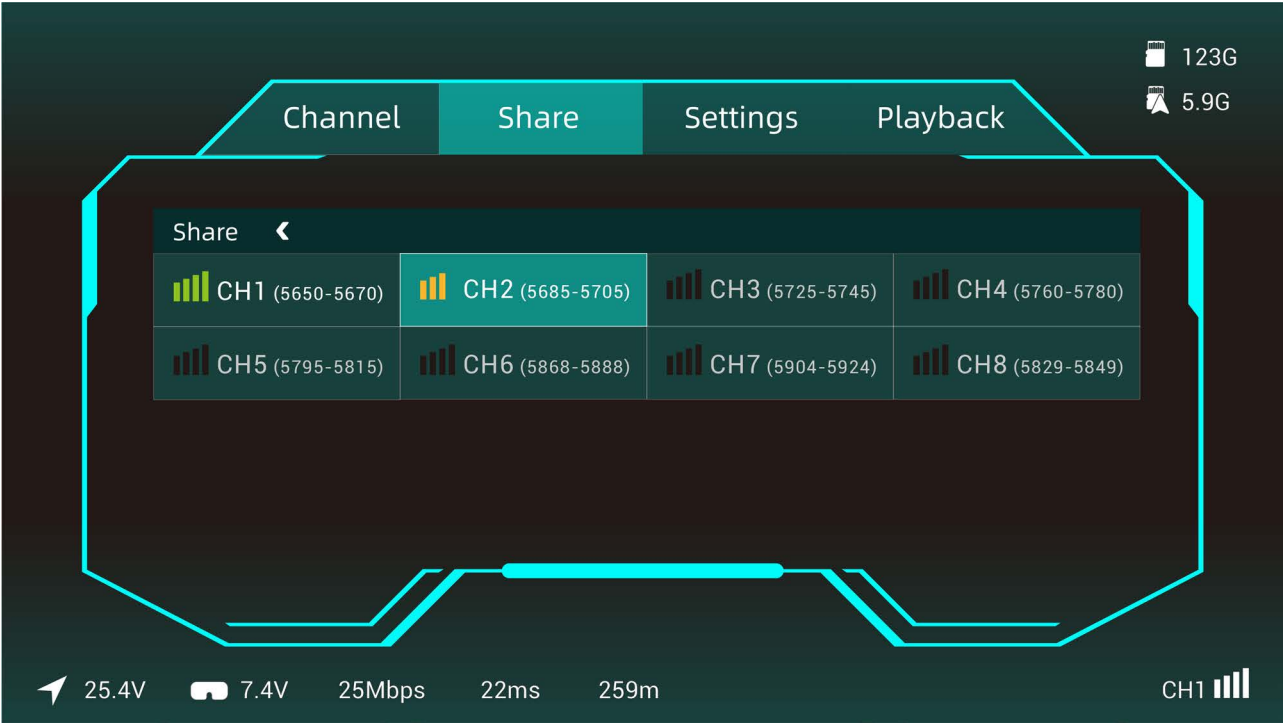
STANDBY MODE



SIGNAL STRENGTH AND CHANNEL SELECTION

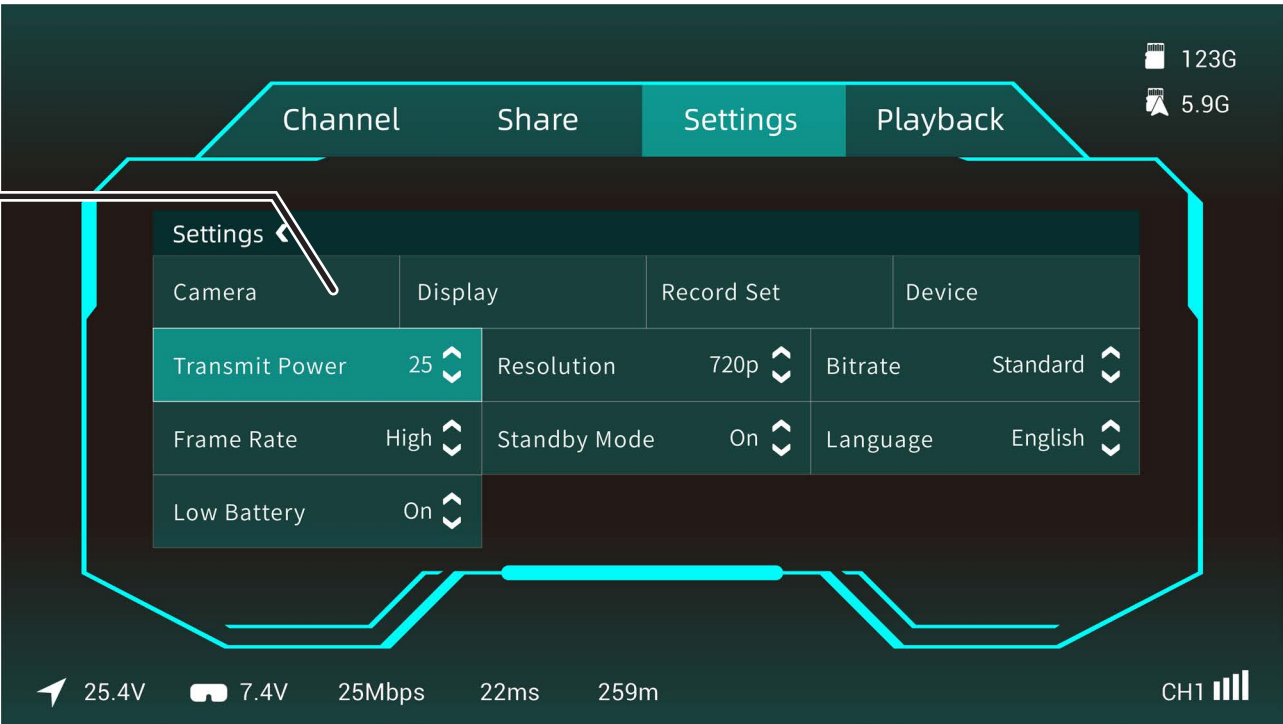


SHARE OPTIONS

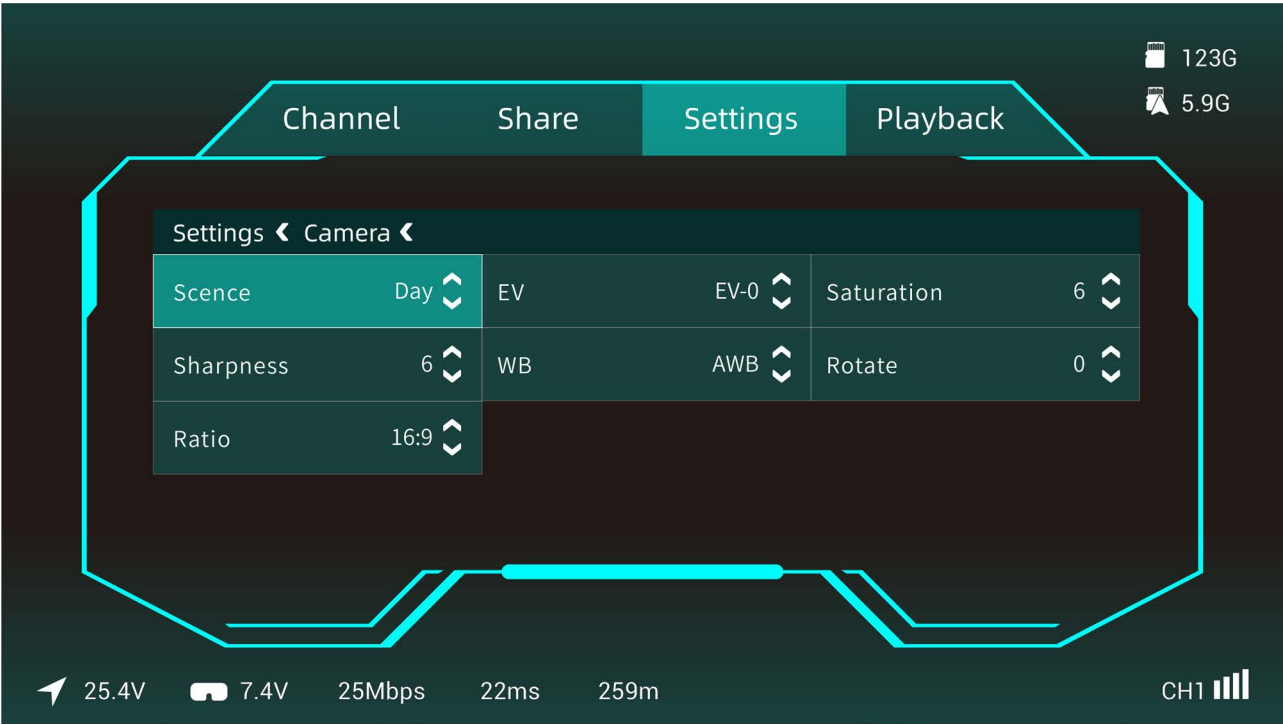


VIDEO TRANSMITTER OPTIONS

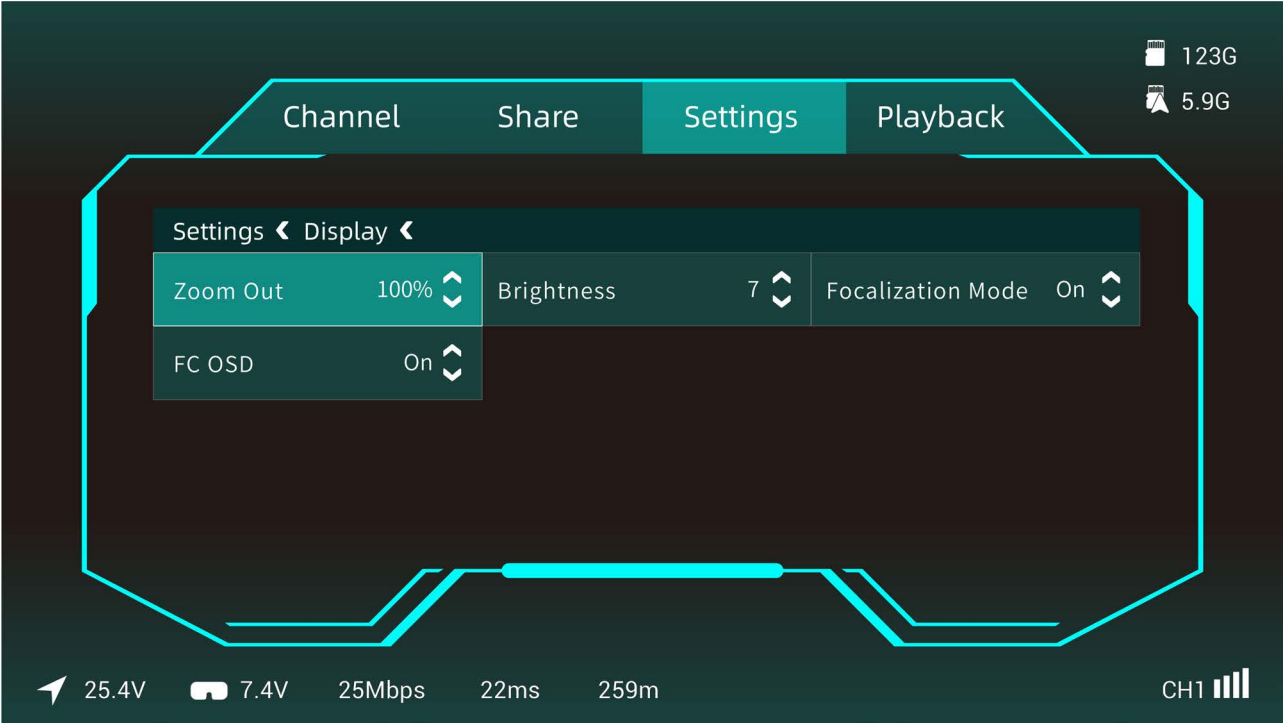
Camera, Transmit Power, Frame Rate, and Low Battery tabs have sub menus available. Select the tab to open the sub menu.



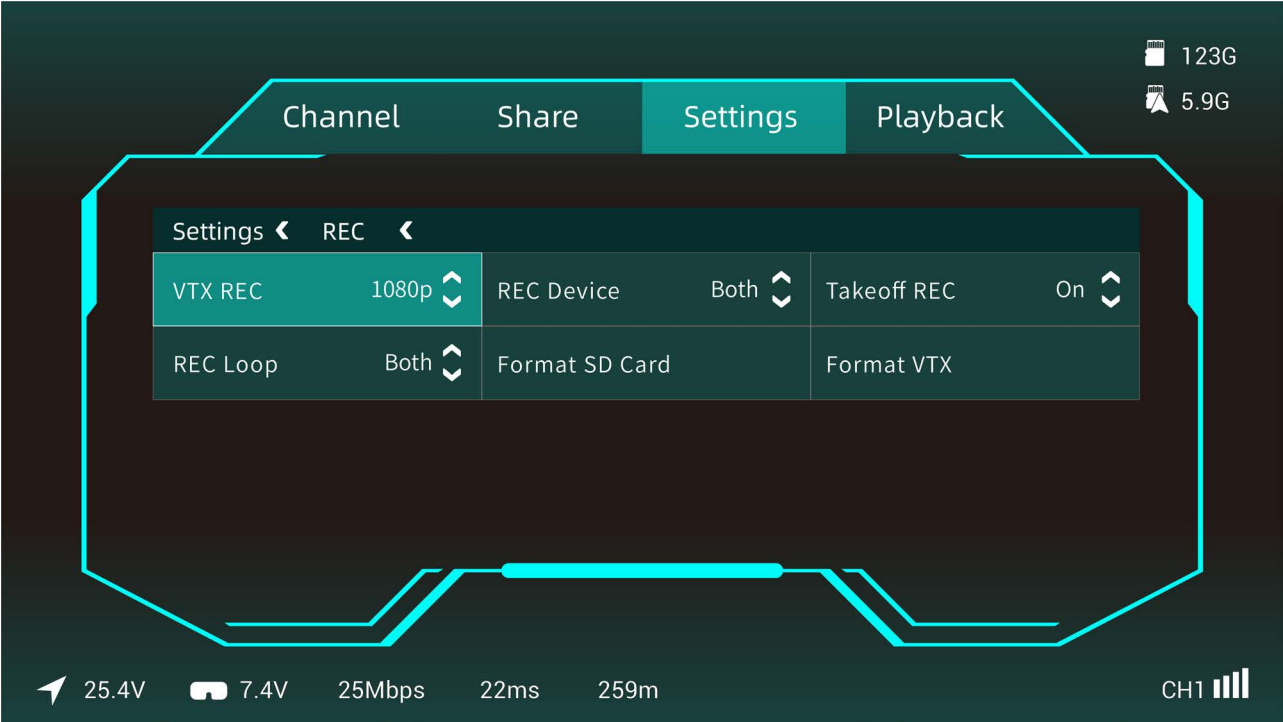
CAMERA OPTIONS



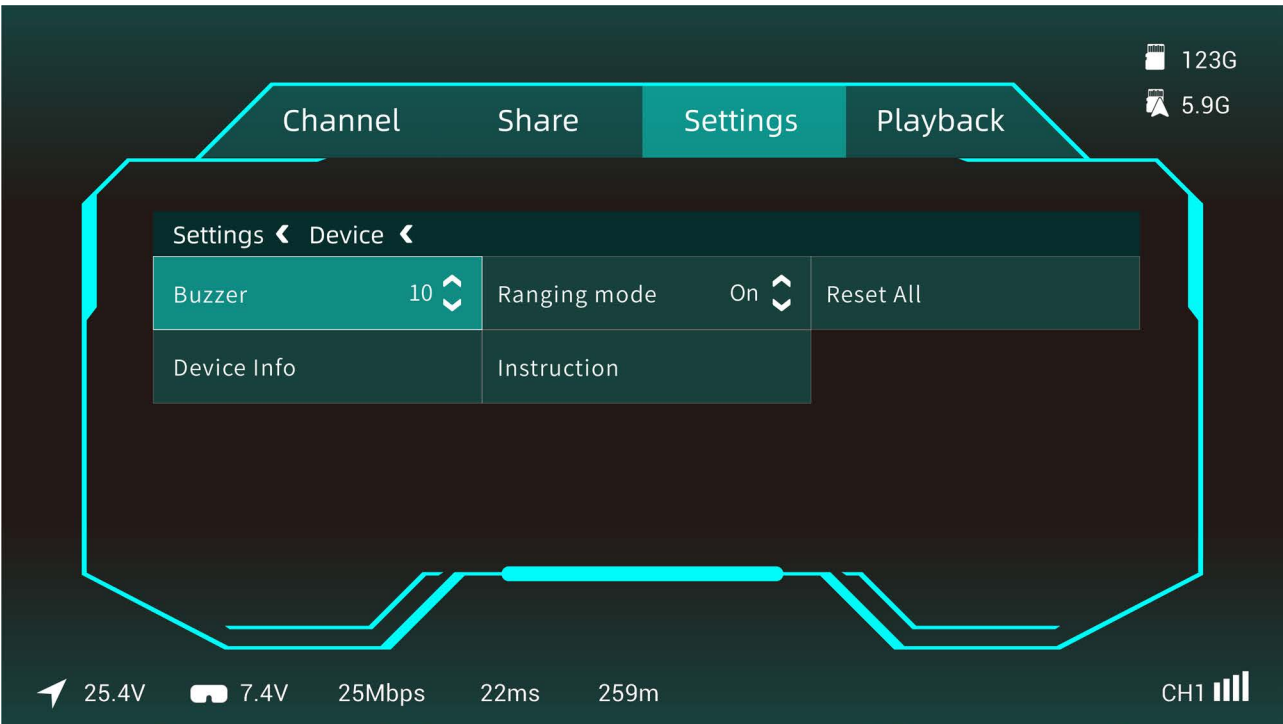
DISPLAY SETTINGS



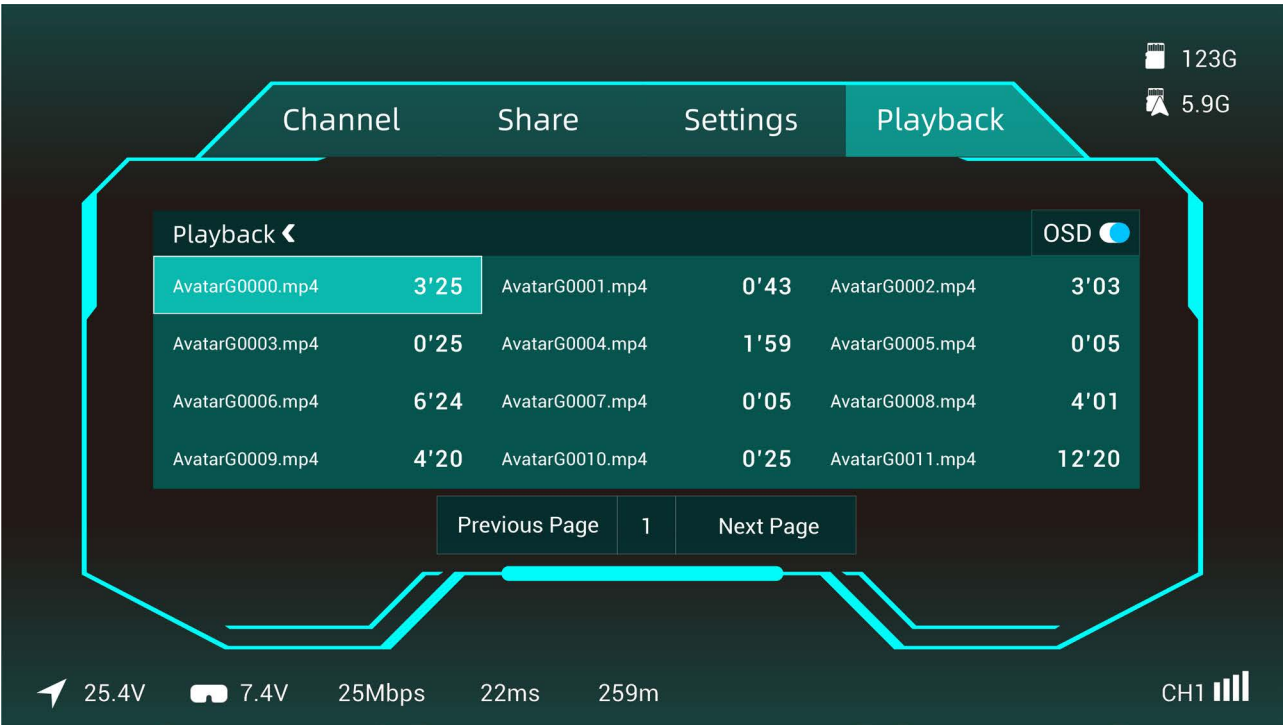
RECORDING OPTIONS



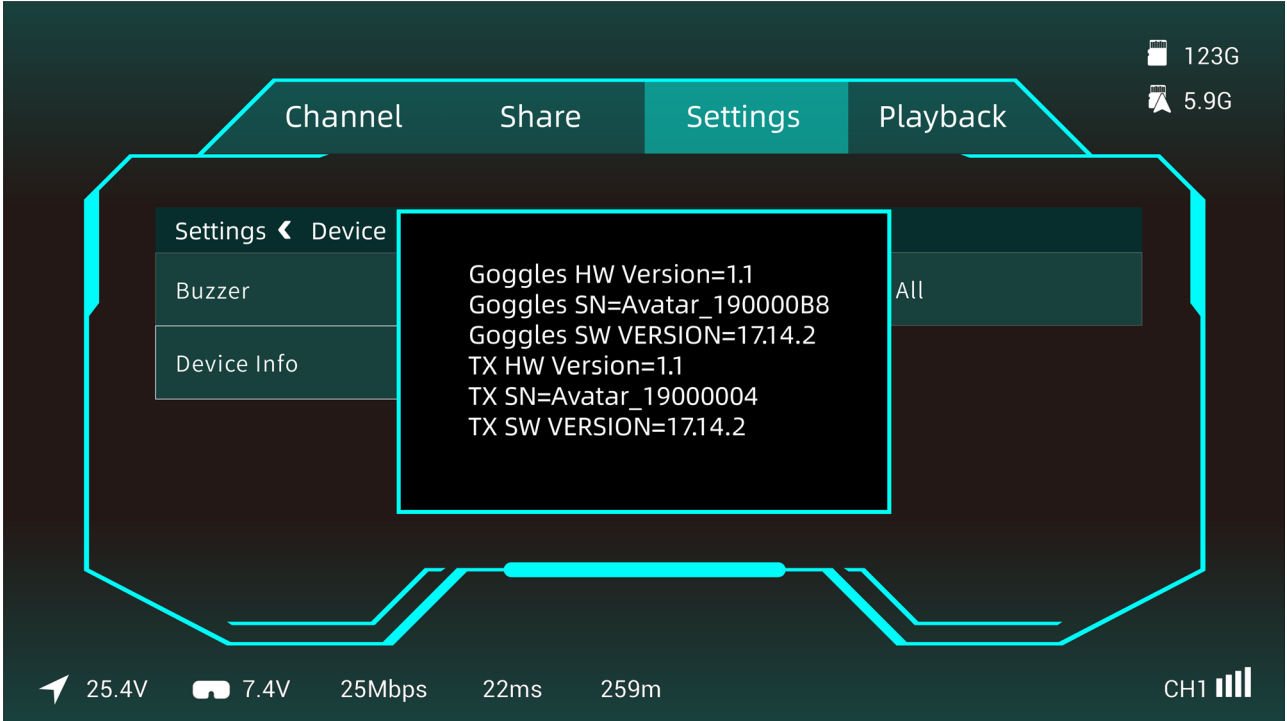
BUZZER OPTIONS



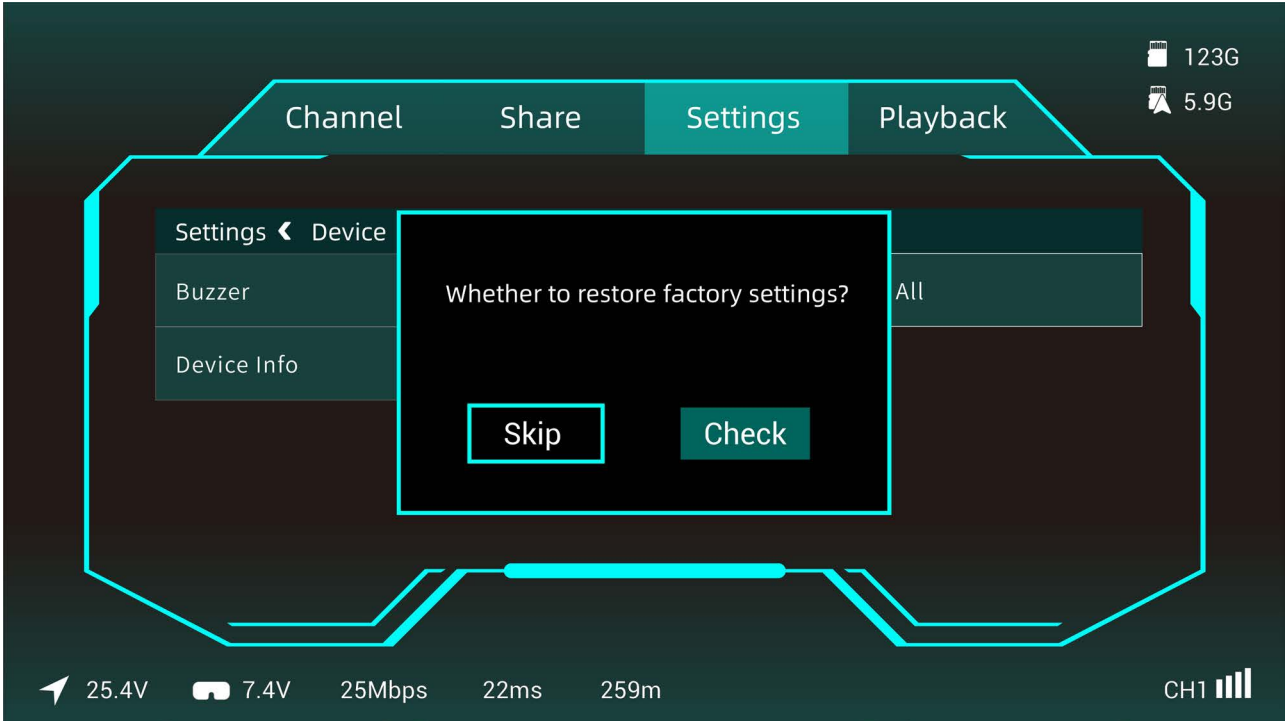
PLAYBACK OPTIONS



FIRMWARE INFORMATION



RESTORE FACTORY SETTINGS



BETAFLIGHT SETUP

CANVAS MODE (BETAFLIGHT)

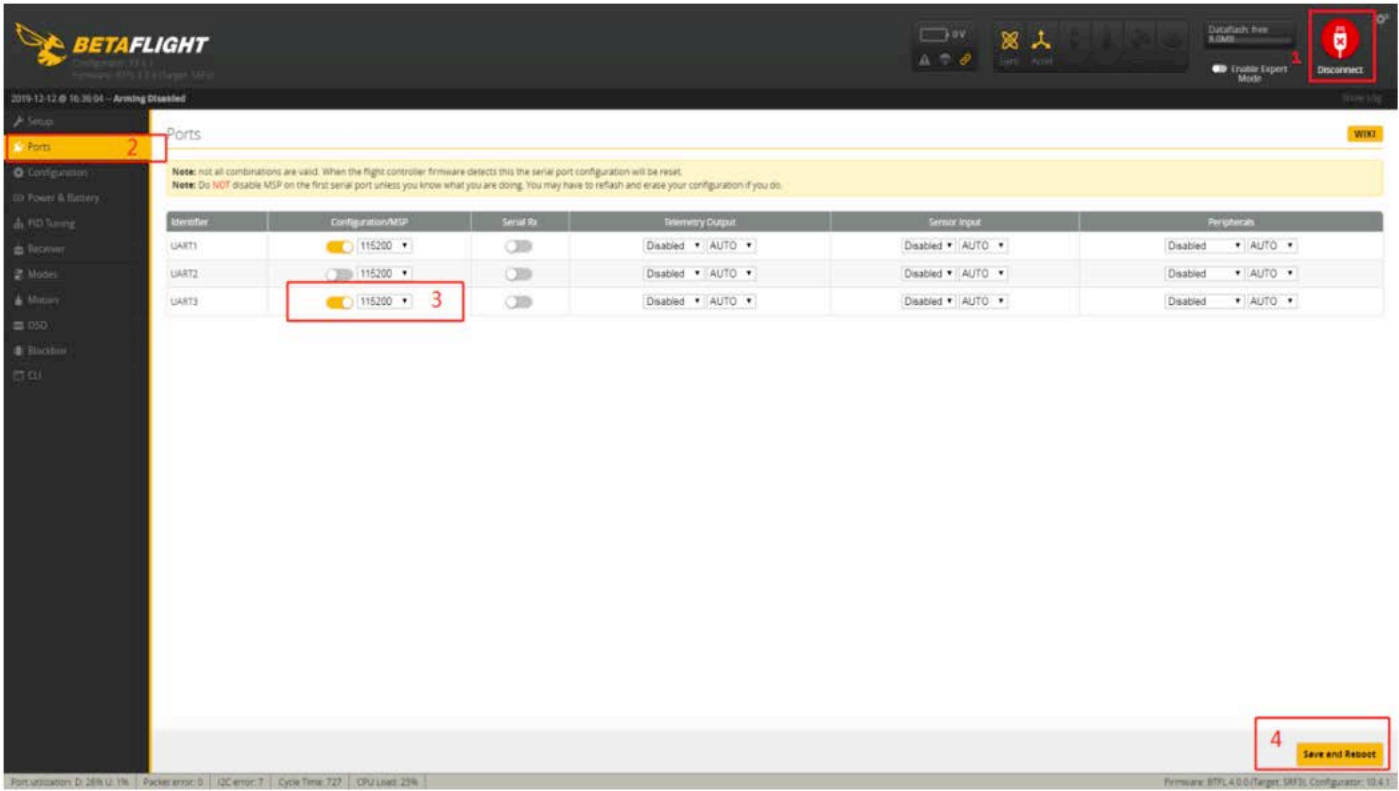
Currently only Betaflight supports msp_displayport. Do not attempt to perform this CLI update on INAV. Please make sure that the FC firmware version is the latest version of BetaFlight. The current (2021/03/12) is version 4.2.8. For a better experience, please wait for the release of version 4.3.0.

- 1. Connect VTX UART to FC’s serial port, such as UART3.
- 2. In the Ports interface, turn on the MSP function corresponding to the Identifier (UART3), the baud rate is 115200, Save and Reboot.
- 3. After opening the CLI, make the following settings:
 - A. Set osd_device to msp:
set osd_displayport_device = MSP
 - B. Specify the serial port of msp_displayport as 2 (the number in this place should be the serial port number minus 1):
set displayport_msp_serial = 2
 - C. Save and exit:
save

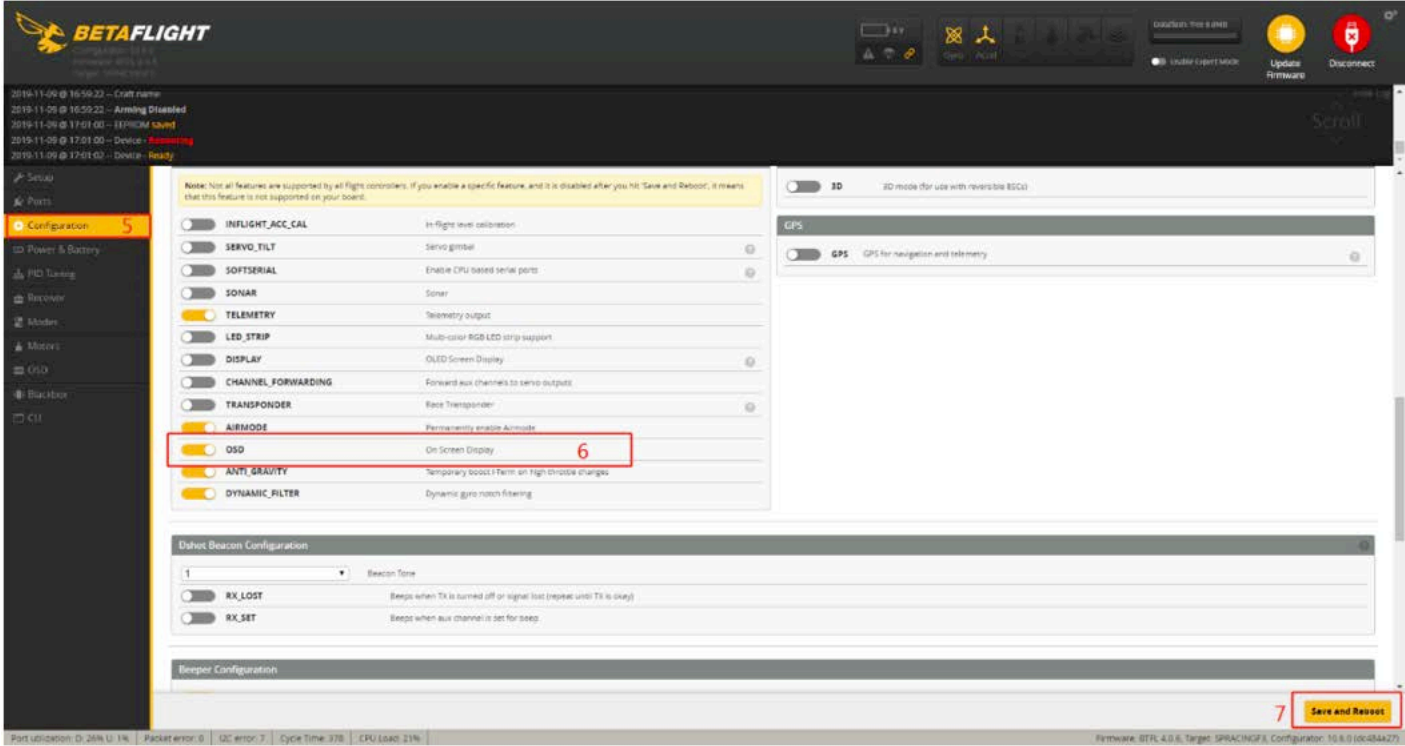
The setup is complete.

OSD SETUP (BETAFLIGHT)

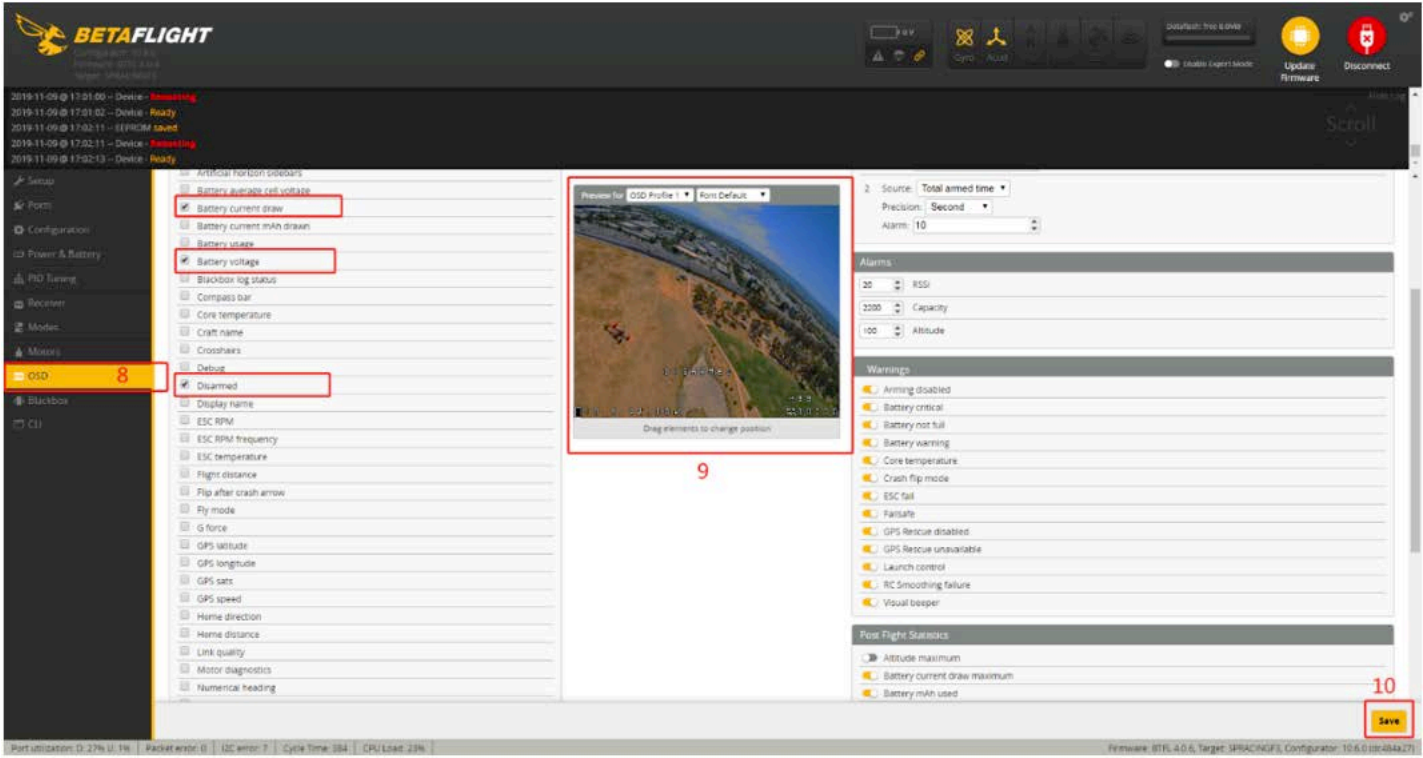
- 1. Connect the Flight Controller to Betaflight 4.x (MultiWii API version 1.41) or above
- 2. Select “Ports”
- 3. Select UART port that is connected with VTX, and set baud rate to 115200.
- 4. Save



- 5. Select Configuration
- 6. Open OSD
- 7. Save



- 8. Select “OSD”
- 9. Select any combination of OSD functions, and drag them to desired positions shown on the simulated OSD.
- 10. Save



TROUBLESHOOTING

Problem	Possible Problem	Possible Solution
Video recording not working	SD card not set to correct format	Reformat the SD card using the goggles
	Less than 200MB available on the SD card	Replace the card or clear off some space on the card and try again
	Not a solid video signal	Focus on reception first
Poor reception	RC antennas too close to video antennas	Maintain maximum separation between RC antennas and video antennas
	Shadowing of VTX antenna	Try a different VTX antenna with a longer coaxial section to get the active element further from carbon fiber or metal parts
	VTX antenna connection loose	Ensure the VTX antenna and any adapters in use are secured and solidly connected. If the antenna becomes disconnected during operation it will degrade performance and may cause permanent damage to the VTX.
	VTX has entered overheat protection mode	Disconnect power and allow the video transmitter to cool, then reconnect power and try again.
		Improve airflow to the video transmitter RF board in your installation. In unconventional installations with poor ventilation, consider adding a cooling fan to improve air flow.
	Loose antenna connection on video transmitter	Make sure antenna connector is seated securely
	Interference from other source of RF	Move goggle away from possible sources or RF interference such as wifi routers, high power transformers, etc
White dead areas appear on screen	Damage from sunlight	Keep the goggles from being exposed to direct sunlight on the optics to prevent further damage. Contact service for a repair quote. Damage from sunlight is not covered under warranty.

TECHNICAL SUPPORT

NOTE: Support should be attempted in the following order. Initial inquiries to Fat Shark support will expect you to have exhausted the online and retailer resources:

1. Research Fat Shark helpdocs which can be found at <http://fatshark.helpscoutdocs.com/> under ***FatShark Troubleshooting***.
2. Contact your retailer for support.
3. Email Fat Shark support. support@fatshark.com

Warranty

The system can be exchanged for a new unit within 7 days for any manufacturing defects if returned in new condition. The video headset will be warrantied for repair for 2 years if there are no signs of excessive use. Buyer will be responsible for shipping costs. If beyond the warranty period, Fat Shark will provide repair services.

