FAT SHARK

DOMINATOR HDO +
MODEL FSV1123_04

USER MANUAL

Revision A 05/28/2024

For more product information, please visit:
www.fatshark.com

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Introduction

Congratulations on purchasing the Fat Shark HDO+ modular 1080P OLED FPV goggles with integrated DVR for analog recording. To ensure your continued enjoyment, please take the time to read through this operating manual thoroughly before using.

There are many feature changes from the previous generations of the Dominator google line. Even if you are a long-time Dominator user, it is recommended that you read this manual to understand what features have been changed and added.

Product Compatibility

The HDO+ has been designed to adhere to established video standards and is compatible with any product also adhering to accepted video standards. Due to the high number of different manufacturers and variation in quality, it's impossible to for us to have tested with every product combination and some troubleshooting may be required if mix/matching components. The Dominator HDO+ has been thoroughly tested with ImmersionRC gear. For best results and no compatibility issues, Fat Shark recommends ImmersionRC gear for your accessory products.

IMPORTANT!!!! Product Warning!!!!!

DO NOT LEAVE HEADSET EXPOSED TO DIRECT SUNLIGHT. SUNLIGHT WILL MAGNIFY THROUGH THE OPTICS AND BURN HOLES IN THE OLED COLOR FILTER (appears as white open areas).

THIS WILL NOT BE COVERED BY WARRANTY. KEEP GOGGLES IN PROTECTIVE CASE WHEN NOT IN USE.

Product Contents

Carrying Case

Dominator HDO+ Headset

Lens Cleaning Cloth

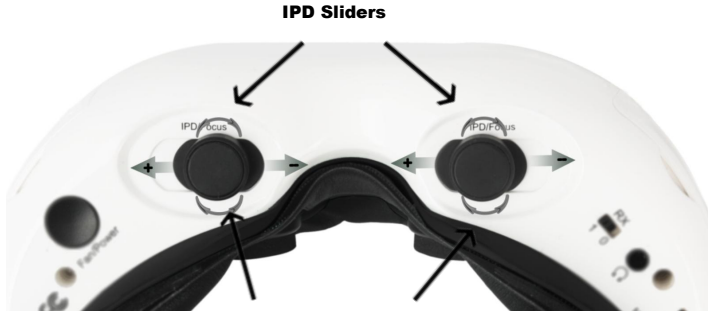
HDO+ Headset Overview

Setup

The HDO+ has many features that can be customized to the individual pilot. This level of personalization requires some interaction to properly set it up for each individual. The following topics are items to be aware of while tuning your HDO+ to you.

Optical Adjustments:

In addition to a larger field of view and higher resolution OLED panel, the HDO+ has a completely updated optical engine that allows for both focus and interpupillary (IPD) adjustment. Spending a little time getting these dialed in can dramatically improve the visual experience of the HDO+ over previous headsets.



The suggested method for optical adjustments is to first power on the headset and get a stable image. This can be done by using a VRx with an external camera, the AV in, or even the DVR menu. Once you have a stable image go through the following steps:

1) **Coarse Focus Adjustment**: As you move your thumb from left to right while wearing the goggles, you will move the lenses in toward the headset. It is recommended that you start by moving both lenses all the way in. Close one eye and slowly move just that lens out until the image comes into focus. Once it works well with one eye, repeat the process with the other eye.
2) **Coarse IPD Adjustment:** Close one eye and use the IPD adjustment to center the image. Once the image is center, close your other eye and center the image.
3) **Fine Adjustment**: Open both eyes and looked at the merged image. It may not appear great yet. At this point, make small adjustments to the focus and IPD to each eye until it feels visually comfortable and merges into a single crisp picture.

Note: It can be helpful to do focus adjustment first as some users will find that changing focus can cause the IPD to shift slightly. IPD adjustments should be the final correction. Once the headset is adjusted it should hold its position and not require more adjustment over many uses.

Head Strap and Face Fit:

The HDO+ has been designed to fit a larger number of face shapes. The first thing to notice is that it ships with Arc inserts between the face padding and the Velcro layer. These inserts may

allow you to get a tighter fit, or they may cause the face fit to be to narrow and create a worse overall experience. Press the HDO+ up to your face with and without the arc inserts to determine which you prefer for reasons of both comfort and light leakage. Some pilots find the “goldilocks” fit by only using a single arc on one side. It does not impact optical alignment so experimentation is strongly encouraged.

Once you have configured your HDO+ for your preferred face fit, put on the head strap, mount the battery, and make any final adjustments to your head strap tightness to finish personalizing your HDO+ to your specific fit requirements.

Display Configuration:

One of the most powerful customization tools in the HDO+ is the ability to tune the actual OLED panels and drivers to the performance parameters that you most prefer. While we recommend a few flights on the default setting, experienced pilots may want to begin to make adjustments right away to customize their display.

To access the complete image setting menu, press and hold the display 5-way switch for 2 seconds. The Image Settings menu should appear onscreen. The 5-way switch is then used to adjust the image settings. Moving the joystick up and down will navigate between setting categories and pressing right or left will increment or decrement the category. The maximum setting for everything but power is 20. The maximum setting for power is 100.

The settings that can be adjusted are contrast, brightness, sharpness, saturation, and power. The first four setting are standard display settings. Power is the actual maximum power provided to the OLED panels. If you increase this, the light energy of the panel will actually go up (so whites get brighter). This will have a negative impact on battery life as it can significantly increase power consumption. It is recommended to keep the OLED power setting at or below 50 for battery life reasons.

General Operation

Initial Setup

Language Selection: First Time Power On, The screen will display a language selection menu.Select and confirm a language to proceed.

Change Language: Use the OSD menu to change the language.

Display Controls:

Brightness/contrast control: On the display 5-way switch, pressing left and right increases/decreases display contrast and forward/back increases/decreases brightness.

Display mode selection: Vertically depressing the contrast/brightness button for a short press scrolls through the following modes: Analog 4:3, Analog 16:9, DIGITAL VIDEO IN. The OSD indicates mode.

Channel select: Pressing channel up/down buttons will cause the channel to incrementally increase/decrease from channels 1 to 8 (see relevant receiver module for channel map). Audio will beep on channel change. A long beep sounds on channel top and bottom limits.

Low battery warning: The HDO+ supports batteries of 2S to 6S. The low-voltage alarm correspondence table for each type of battery is as follows (note that for each type of battery, the low-voltage alarm will only take effect when the power is higher than 80%).

Battery Type	Alarm triggers
2S battery	6.8V±0.2
3S battery	10.2V±0.2
4S battery	13.6V±0.2
5S battery	17V±0.2
6S battery	20.4V±0.2

Volume control: each press of button increments volume up or down. Standard earphones can be used with the Dominator HDO+

RX power switch: The RX module power is independently controlled via this switch. If a module is inserted, but desired video source is via the AV cable; the RX module needs to be turned off to avoid image conflict.

OSD Function:

Accessing the OSD Menu: Depressing vertically press the DISPLAY 5-WAYSWITCH to enter the OSD menu interface.The menu interface will appear on the screen.

Navigating the Menu: Use the up, down, left, and right keys to navigate through the different menu options.Depressing vertically press the selected option to confirm and enter the submenu.Press the left arrow key to return to the previous menu or exit the OSD menu.

DVR Operation:

1.SD card MUST be formatted before use to ensure stable recording.

2.DVR is for analog recording only, no HD recording.

3.Do not place alternative files that you want to keep into the DVR. The DVR may not recognize the file space and write over your files. Use dedicated SD card.

Recording (Using the DVR 5-way switch):

After powering goggles, turn on DVR by depressing vertically press the DVR 5-WAYSWITCH **(shot press)**.

The DVR red LED should now show be solid.

Ensure a SD card is inserted and **short press** to start recording (LED will slowly FLASH (~2 times/second). Single beep on record start.

Short press again stops recording (turns to solid LED). Double beep on record stop.

Playback (Using the DVR 5-way switch):

After turning on DVR and in stop record mode (SOLID LED) depress and hold DVR button for 2 second (long press) to enter videop playback mode.To exit playback mode, press and hold the DVR button again for 2 seconds.

- Navigate Videos: Use the up and down buttons to switch between videos.
- Fast Forward/Rewind: Use the left and right buttons to fast forward or rewind.
- Pause/Play: Press the center button to pause or play the video.

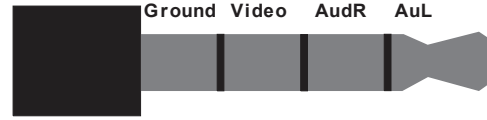
Record– Setting Auto Recording

- Access OSD Menu: Enter the OSD menu to adjust settings.
- Toggle Auto Recording: Select the option to turn auto recording on or off
- Auto Start: the DVR will start recording when the headset is powered on

Please note that the DVR will stop recording once the SD card is full. Please replace the memory card in a timely manner.

Format： Access the Recording menu via the OSD, select Format Memory Card, and choose 'Yes' to confirm formatting or 'No' to cancel.

AV connector Pin-out



3.5mm AV Connector: Yellow: Video, White: Audio Left, Red: Audio Right

DIGITAL VIDEO IN Input

The DIGITAL VIDEO IN port can be connected to DIGITAL VIDEO IN devices via a Mini to Mini DIGITAL VIDEO IN cable. It is recommended that the cable is first connected to the DIGITAL VIDEO IN source. Then, turn on the HDO+. The objective to allow the DIGITAL VIDEO IN device to initiate using power supplied by the host device before rather than the goggles.

Note: Most DIGITAL VIDEO IN connectivity issues are due to either incorrect monitor settings or faulty a DIGITAL VIDEO IN cable. Before assuming the DIGITAL VIDEO IN is defective, try connecting with alternative DIGITAL VIDEO IN sources and alternative cables.

Specifications

Optics:

FOV (field of view):	50 degrees diagonal
IPD (interpupillary distance):	57 to 70 mm (adjustable)
Focus:	+2 to -6 diopters (adjustable)

Display:

Two seeya 0.49" OLED displays
Resolution 1920 X 1080
NTCS/PAL auto selecting
AV Mode 4:3
AV Mode 16:9
DIGITAL VIDEO IN Mode 16:9

Audio: Stereo

User Controls:

Channel Selection
Volume Control
Mode Selection
Display Control (Brightness and Contrast)
DVR Control
Power Button / Fan Control

Electrical:

Power Supply:	7 – 25V input voltage (2S – 6S Supply)
Analog DVR:	MicroSD support to 32 GB Record Rate: 6Mbps (MJPG compression, 30 fps, AVI) File playback (native recording, no codec support) Upgradeable via SD card

Interface:

3.5mm AV in/out port
Power input port
3.5mm 3p earphone port
MicroSD
RF Module Bay
Power Button

Mechanical: Ergonomic molded headset w/ adjustable headband

Dimensions:	169.2 x 80 x 45.5 mm
Weight:	235.8 g

Technical Support

Documentation/ troubleshooting: http://fatshark.helpscoutdocs.com/

Support:support@fatshark.com

Note support should be attempted in the following manner. Initial enquiries to Fat Shark support will expect you to have exhausted the online and retailer resources:

1) Research Fat Shark helpdocs.

2) Contact retailer for support.

3) email Fat Shark support.

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, we will provide repair services.