TRANSFORMER USER MANUAL

FSV1101  Transformer 720p display
FSV1102  Transformer Binocular Viewer
FSV1103  Transformer Full Panel Viewer

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For more product information, please visit: www.fatshark.com
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Age Recommendation:
Not for children under 14 years old.
*Using any near eye displays on children under 14 can cause eye development problems. This is not a toy.

Safety Instruction:
1. Please avoid wet or humid environments.
2. Please turn on/off the power as shown in the instruction below. Incorrect operation will be dangerous and could cause injury.

Warning:
Read the entire instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage of the product, personal property and cause serious injury.
Product Contents

FSV1101 Transformer 720p display

Monitor x 1pc

Li-ion battery holder x 1pc

Lens cleaning cloth x 1pc

Manual x 1pc
Product Contents

FSV1102 Transformer Binocular Viewer

Binocular Viewer  x 1pc

Battery extension cable x 1pc

Lens cleaning cloth x 1pc
Product Contents

FSV1103 Transformer Full Panel Viewer

- Full Panel Viewer x 1pc
- Battery extension cable x 1pc
- Lens cleaning cloth x 1pc
- Cap x 1pc
For circular polarized (omni directional) Antenna(recommended)

For patch antenna (recommended)

1) Short Press to change display mode
2) Long press down rotates the image 180 degree

5 way joystick

Channel Selection

AV IN
AV OUT
AUDIO OUT
DC IN

High-Definition Multimedia Interface IN

USB (F/W updates)
Controls Diagram

FSV1102 Transformer Binocular Viewer

*SUN WARNING! DUE TO 3.6X OPTICS, LCD DAMAGE IS POSSIBLE IF LENS EXPOSED TO BRIGHT LIGHT. THIS WILL NOT BE COVERED BY WARRANTY.*
Controls Diagram

FSV1103 Transformer Full Panel Viewer

Screen holder clip

Bottom panel

Open the bottom panel, you can change your lens.
Assembly instructions

Transformer 720p display + Binocular Viewer

Step 1: Take off the cap

Step 2: Clip the cap

Step 3: Place the display as shown below, antenna connector in the front

Transformer 720p display + Full Panel Viewer

Step 1: Take off the cap

Step 2: Clip the cap

Step 3: Place the display as shown below, antenna connector in the front
Fat Shark

Features

- 5.5” LCD screen with 1280*720p resolution
- FOV 47 degrees (full panel viewer) / 55 degrees (binocular viewer)
- Support 16:9 and 4:3 analog display
- Support side by side image for binocular viewing (analog only)
- High definition media interface for 720p HD display
- Built-in 5G8,32CH antenna diversity receiver

Headset Operation

Controls:
Within 10 seconds of powering on, the display modes can be cycled through and changed by depressing the joystick. After 10 seconds the mode becomes locked (to prevent accidental changing of display mode during use). Reconnecting the power resets the ability to change modes (for 10 seconds).

Display Control:
Pressing left/right on the joystick increases/decreases contrast
Pressing forward/backward increases/decreases brightness.
Short Press down to change display mode in following order:
RF SPLIT/ AV SPLIT /RF 16:9 / RF 4:3 / AV 4:3 / HD.
Long press down rotates the image 180 degree (for use with full panel viewer).

Channel Select:
Press the up/down channel select switches causes the channel to change in the corresponding direction.

Volume Control:
Audio output is set on high for use with adjustable volume style earphones (sold separately). There is no volume control.

Low Battery Warning:
Audio warning if input voltage drops below 6.8V

AV Cable Pin out

3.5mm AV Connector:
Yellow: Video, White: Audio
Left, Red: Audio Right
**HD Input:**
The HD port can be connected to HDMI devices via the high definition media mini port. Recommend to first connect to the HDMI device then apply the power from the battery (allow the HDMI device to initiate using power supplied through the cable by the host device before powering goggles). Disconnect power when switching between devices to clear the settings.

Note: Most HD connectivity issues are due to either incorrect monitor settings or faulty cable. Before assuming the HD port is defective, try with alternative HDMI sources and alternative cables. HDMI cables may fracture over time at connector flex points.

**Diversity Receiver:**
The diversity receiver has two SMA connectors marked Primary and Secondary. The purpose of diversity receiver is to combine coverage of a direction and omni antenna. If using with a single antenna (omni or directional), place on Primary SMA only. If using with a directional AND an omni, place the omni on Secondary SMA and the directional on Primary SMA.

**18650 Battery Holder (batteries not included):**
The Fat Shark 18650 Battery Holder is compatible with commonly available 18650 style Li-Ion packs to provide a huge capacity power supply. The holder has a row of stylish blue LED indicators to indicate remaining capacity (4 levels) to prevent a sudden power/vision lost. It seats securely in the headset strap pocket on back. Batteries must be removed from holder and charged via external charging (charger and batteries not included).

**Specification (FSV1101 Monitor):**

<table>
<thead>
<tr>
<th>Electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Receiver: 4 Bands, 32 Channels, 5G8Antenna diversity receiver</td>
</tr>
<tr>
<td>- Channel</td>
</tr>
<tr>
<td>Fat Shark:</td>
</tr>
<tr>
<td>Race Band:</td>
</tr>
<tr>
<td>Band A:</td>
</tr>
<tr>
<td>Band E:</td>
</tr>
<tr>
<td>- Working Voltage: DC input 7- 13V</td>
</tr>
<tr>
<td>- <a href="mailto:500mah@7.4V">500mah@7.4V</a> (RF mode) / <a href="mailto:320mah@7.4V">320mah@7.4V</a> (AV mode)</td>
</tr>
<tr>
<td>- Channel: selected by buttons (up/down)</td>
</tr>
</tbody>
</table>
### Ports
- 1 x Audio out (volume adjustable by earphone, 3 pole 3.5mm connector)
- 1 x DC in (5mm DC barrel)
- SMA RF in (2)
- 1 x AV IN
- 1 x AV OUT
- Mini High Definition Media in
- Micro USB for firmware upgrade

### Mechanical
- Grey/Orange plastic
- Threaded tripod mount, compatible snap fit with viewer modules

### Display
- 5.5” LCD Screen, 720P, No Blue Screen, true snow if no signal
- Resolution: 1280*720p, True 720P HD
- Display Ratio: 16:9 / 4:3
- Brightness: 300cd/m²
- Working environment: -20~60°C
- PAL or NTSC auto selection
- Operating Language: English Only
- OSD Icons: Receiver Band, Receiver Channel, Brightness, Contrast, disappear after 2s
- OSD menu for display mode selection:
  1. RF SPLIT  2. AV SPLIT  3. RF 16:9  4. RF 4:3  5. AV 4:3  6. HD

### Operation
- Exceed 10s after power on, display mode selection is not available
- Auto save settings after power off

### Controls
- Channel/band up button
- Channel/band down button
- Brightness / Contrast 5 way joy switch
# Specification (FSV1102 Binocular Viewer):

<table>
<thead>
<tr>
<th>Mechanical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grey/Orange, black (removable) face foam</td>
</tr>
<tr>
<td>3 harness head strap (side, top)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution: 640 x 480 (VGA)</td>
</tr>
<tr>
<td>FOV: 55 degrees</td>
</tr>
<tr>
<td>Display Ratio: 4:3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct view, 3.6X binocular magnifier</td>
</tr>
<tr>
<td>Adjustable focus (0 to -4dpt)</td>
</tr>
<tr>
<td>Adjustable IPD (61 mm to 71 mm)</td>
</tr>
</tbody>
</table>

# Specification (FSV1103 Full Panel Viewer):

<table>
<thead>
<tr>
<th>Mechanical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grey/white, black (removable) face foam</td>
</tr>
<tr>
<td>3 harness head strap (side, top)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution: 1280*720 (720p HD)</td>
</tr>
<tr>
<td>FOV= 47 degrees (16:9 mode)</td>
</tr>
<tr>
<td>Display Ratio: 16:9 / 4:3</td>
</tr>
<tr>
<td>Brightness: 250 cd/m2 (50% brightness loss due to viewer optics)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct view optics, 2.5X binocular magnifier</td>
</tr>
<tr>
<td>Interchangeable lens (accessory, sold separately)</td>
</tr>
</tbody>
</table>
## Trouble Shooting

<table>
<thead>
<tr>
<th>Observation</th>
<th>Possible Cause/Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>No image, display is completely dark</td>
<td>- No power supplied. Check power connections.</td>
</tr>
<tr>
<td>No image, display is glowing dark grey</td>
<td>- If using wireless module, switch to Rx display mode</td>
</tr>
<tr>
<td></td>
<td>- If using AV in cable, check video source.</td>
</tr>
<tr>
<td></td>
<td>- Ensure TX is on and camera connections solid</td>
</tr>
<tr>
<td>Poor image, dark or not enough contrast</td>
<td>- Adjust display with contrast/brightness joy switch</td>
</tr>
<tr>
<td>Lots of interference lines (horizontal lines)</td>
<td>- Check to see if cause is harmonic interference from 2.4Ghz RC controller (turn radio on/off).</td>
</tr>
<tr>
<td></td>
<td>- Use CH1 on TX/headset (Ch1 not affected by 2.4Ghz)</td>
</tr>
<tr>
<td></td>
<td>- Check correct frequency antenna is used</td>
</tr>
<tr>
<td></td>
<td>- Choose a cleaner channel.</td>
</tr>
<tr>
<td>Short range</td>
<td>- Ensure correct antenna are installed</td>
</tr>
<tr>
<td></td>
<td>- Check for other sources of interference</td>
</tr>
<tr>
<td></td>
<td>- Ensure transmitter has clear LOS to headset. Test in wide open area, away from any obstructions</td>
</tr>
<tr>
<td>HDMI doesn’t work</td>
<td>- Incorrect display mode settings (when connected to computer, make sure output to alternative monitor is selected)</td>
</tr>
<tr>
<td></td>
<td>- Faulty HDMI cable/adapters</td>
</tr>
<tr>
<td></td>
<td>- Ensure source is set to 720p</td>
</tr>
<tr>
<td></td>
<td>Before concluding the HDMI is faulty, test with alternative HDMI source and different cables</td>
</tr>
</tbody>
</table>

## Warranty

The system can be exchanged for a new unit within 15 days for any manufacturing defects if returned in new condition. The video headset will be warranted for repair for 2 years if no signs of excessive use. Buyer will be responsible for shipping costs. If beyond the warranty period we will provide repair services.