AOMWAY FPV Goggles Commander V2 User Manual

1. INTRODUCTION:

Commander V2 goggles now are upgraded with a pair of 4 to 3 SVGA LCD micro displays (large FOV as 45 degrees) and can fully support side/side 3d video. Now the HDMI port can accept full HD 1080p input and IPD maximum range increases to 72mm for more adjustments. This goggles can auto switch PAL/NTSC and built-in DVR with SD card slot seated on top for easy recording video file. OSD menu includes mode, brightness/contrast, channel/band, voltage and DVR status. Moreover, a new head tracker module now can be conveniently installed into the slot on top of the goggles, users can choose to purchase the head tracker module later.

2. SPECIFICATIONS:

Optical:
- FOV: 45°
- Lens: Glass optics (binocular)

Display:
- 800x600（SVGA）LCD display, LED backlight

3D function:
- Side/Side 3D (include AV 3D and HD 3D mode)

Interpupillary Distance (IPD):
- 59~72mm (Adjustable)

Audio Output:
- Stereo

Operation:
- Brightness / contrast / channel selection / display mode /DVR recording / head tracker switch/ mini fan switch

Video Format:
- NTSC / PAL auto switch

HD Input:
- Support 720p and 1080p

DVR Recording:
- Only for RF and AV in mode
- TF card support to max 32GB
- Video compression format: MJPG 30fps
- Recording resolution: D1 NTSC 720*480/ PAL 720*576

Head Tracker slot:
- Available (head tracker to purchase separately)

Built-in Receiver:
- Two 64 CH high-sensitivity diversity RF module, auto switch, channel# display on screen

Auto Scan:
- One key start auto search within all the channels at high speed

Power Supply:
- DC 7-18V (2S-4S)
- OSD display voltage status (low voltage alarm)

Interface:
- DC in: standard 5.5*2.1 (inner plus outer minus type)
- AV in: 3.5mm four-pole AV jack port
- Audio: 3.5mm three-pole earphone jack port
- Head tracker: PS2 data port
- TF card slot for recording

Operating Environment:

- 0 - 55°C
- Weight: 198g
- Package Size:230*165*77mm

3. CAUTION!!

- Please avoid dropping or severe impact or violent shaking of this product, otherwise it will cause possible damage to the screen or malfunction.
- Please avoid using this product under extremely cold or severe heat or dusty or humid environments; pay extra attention when using under the below environments:
  - At a place that is full of dirt and dust;
  - At a place that easy to contact water such as raining day or beach.
- During a long time operation, we suggest user to take a break at least every 30mins of use; in case that you have got a uncomfortable feeling, please stop using the product immediately, and when it is necessary please seek medical aid;
- When the lenses are dirty, please use a cloth made of cotton to clean gently;
- Please pay extra attention when carrying this product, don't directly put it together with other items into your bag or pocket without a carry case to protect;
- For long time no use, please store it in a dry environment with good ventilation. After a certain period, you need to power on for checking its condition;
- The interval waiting time should be at least 10s between unplug and re-plug the power, otherwise the DVR might not work properly.

WARNING: DO NOT EXPOSE GOGGLES TO DIRECT SUNLIGHT. THE OPTICS WILL MAGNIFY SUNLIGHT THEN DAMAGE INNER LCD; THIS WILL NOT BE COVERED BY WARRANTY.
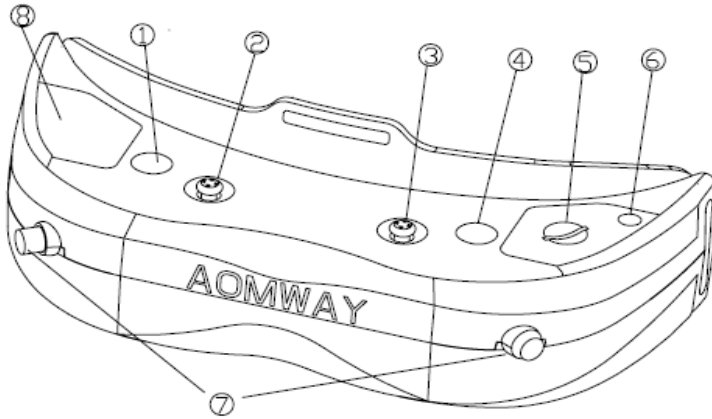
4. ACCESSORIES:

1 x Carry Case

1 x AV cable

1 x Filtered adapter

1 x User manual

2 x Foam (thin and thick)

2 x Antenna

2 x HT connection cable (only included for HT version goggles)

5. OSD menu:

```
Band              A
Channel           1
Mode              AV2D
Brightness        10
Contrast          10
RF Mode           ON
HeadTracking      XY-P
Idle Alarm        10min
Language          EngLish
Volume            01
DivRFMode         FPV Race
Exit
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6. DIAGRAM:

- Key ① (press button on right side):

Long press 3s to activate head tracker (need to purchase separately) and buzzer will beep twice; and long press 3s to deactivate head tracker and buzzer will beep three times. Each time when power on, head tracker stays default off;

Single press to run the mini fan 10mins for anti-fogging.

- Key ② (5 way joy switch on right side): DVR recording (only for analog recording)
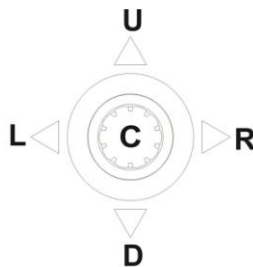
1) Long press down at center for 3s to activate DVR, and then single press at center to start/stop recording. 'REC' will flash on screen to indicate recording status;

2) After DVR activated, long press down at center for 3s to enter into DVR menu: sticker up/down to previous/next option, left to return,

right to confirm. Before enter to DVR menu, need to long press Key ③ at center for 5s to shut off RF input, otherwise cannot display DVR file;

3) DVR menu: playback, format, language, auto start recording;

4) When play back the recording file: sticker up for fast forward at 2X,4X,8X speed, sticker down for fast backward at 2X,4X,8X speed, sticker to right for play/pause, sticker to left for return.

● Key ③ （5 way joy switch on left side）：
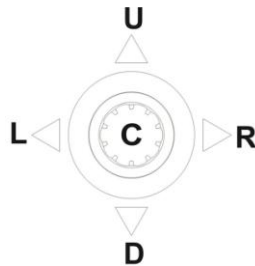
1) Press down at center: short press to select display mode between AV 2D, AV 3D, HD 2D and HD 3D mode; and long press 5s to shut off RF input, otherwise DVR cannot playback;

2) Move up/down for contrast '+/-' adjustment;

3) Move left/right for brightness'-/+'adjustment;

4) Long press at center for 5s to shut off RF input(need to turn off under AV or HD mode) .

● Key ④ （ press button on left side）:

1) Each time long press button 3s to select the next band between band A, B, C, D,E,F,G and H;

2) Short press button to select channel from CH 1 to 8;

3) Long press button 5s to start auto scan (beeping 3 times) within all the channels and the process will take about 8s;

4) while selecting band/channel, channel# will display on screen for 5s.

| FR\CH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
A	5705MHz	5685MHz	5665MHz	5645MHz	5885MHz	5905MHz	5925MHz	5945MHz
B	5733MHz	5752MHz	5771MHz	5790MHz	5809MHz	5828MHz	5847MHz	5866MHz
C	5725MHz	5745MHz	5765MHz	5785MHz	5805MHz	5825MHz	5845MHz	5865MHz
D	5740MHz	5760MHz	5780MHz	5800MHz	5820MHz	5840MHz	5860MHz	5880MHz
E	5658MHz	5695MHz	5732MHz	5769MHz	5806MHz	5843MHz	5880MHz	5917MHz
F	5362MHz	5399MHz	5436MHz	5473MHz	5510MHz	5547MHz	5584MHz	5621MHz
G	5333MHz	5373MHz	5413MHz	5453MHz	5493MHz	5533MHz	5573MHz	5613MHz
H	5653MHz	5693MHz	5733MHz	5773MHz	5813MHz	5853MHz	5893MHz	5933MHz

● Position ⑤ : TF card slot for DVR recording， maximum support to 32GB;

● Port ⑥ : Earphone port， support 3.5mm 3-pole earphone jack;

● Position ⑦ : Antenna SMA jack connector.

● Position ⑧: Head tracker installation slot.
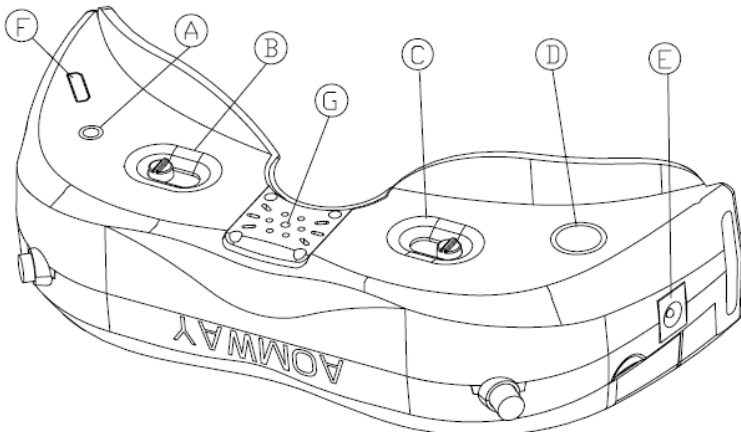
- Port A: AV in/out, support 3.5mm 4-pole AV jack (when use RF signal, please unplug AV cable);
- Position B and C: left and right interpupillary distance slider;
- Port D: Head tracker output data port (also as the secondary power input);
- Port E: DC power input port, voltage range 6-17v ;
- Port F: High definition multimedia interface connector, support 720p and 1080p input;
- Position G: Ventilating fan for anti-fogging.

7. DVR OPERATION:

- TF card should be formatted before use for DVR recording, otherwise it might not be recognized;
- Please shut off power before insert or pull out TF card to avoid unexpected damage to card or goggles;
- DVR is only used for recording RF/AV-in signal, not available for HD recording;
- DVR can auto save file if the power is accidently shut off.

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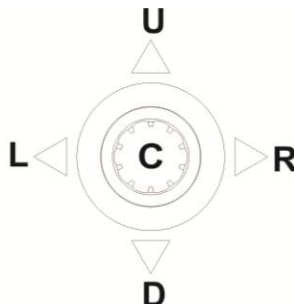
- Long press joy switch 3s at the center to activate DVR, 'REC' will show on the screen, short press at the center to start/stop recording, 'REC' will be flashing during recording.

- When standby, long press joy switch 3s at the center to get out DVR menu, move up/down for selection, move left to return and right for confirmation.

- Playback: move up to do 2X, 4X, 8X   fast forward，move down to do 2X, 4X, 8X rewind, move to the right for pause /play, move to the left for return.

8. HEAD TRACKER:

- Here head tracker is modularized, default to use CH7, CH8 on radio controller; then pan, tilt servo cable must be connected to CH7, CH8 on receiver side as well;

- Note that this head tracking system has two operation modes: one for 360 degree brushless gimbals and another for 90 degree pan/tilt servos. Press and hold Key ① before power on, after 5s, you will hear buzzer beeping twice, and then release the button（long beep once）to switch mode once. When power on, it stays on last time saved mode.

- Connect goggles to radio controller: firstly power off your radio controller then have trainer cable's one end plugged into goggles' PS2 data port and another end plugged into radio controller;

- Switch on radio controller, set up the trainer function, activate CH7 and CH8; long press Key ① for 3s to activate head tracker, when goggles moves at pan, tilt direction, the servo will move to the same direction;

- If the servo moving direction is opposite, long press Key ① for 5s to change direction once in following order: 1. reverse pan and tilt direction; 2. reverse tilt direction; 3.reverse pan direction; 4. back to default.

- If head tracking function does not work, please check radio controller channel and servo setup;

(Please refer to your radio controller's user manual)
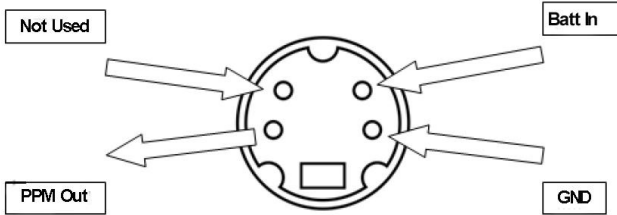
Head tracking data cable:

Turnigy 9X Radio	Futaba Radio

PS2/3.5	PS2/FUTABA

9. HD INPUT:

- To display HD signal, need to use Key ③ to select HD 2D/3D mode
- Support 720p@60fps, 1080P@30fps HD input
- HD input port is female C-type
- Please connect HD cable between output device and goggles first before power them on; when changing signal source, the goggles should be off first (to refresh the memory).

Note:

1) Most HD display problem is caused by cable or connector's quality issue. If you find HD input wrong, please check HD input source or replace the cable.

2) When switch to HD 2D/3D mode, RF modules will be automatically deactivated to avoid input signal conflict.

10. AV IN / OUT

● AV cable using standard 3.5mm 4-pole AV jack connector;

● Yellow: Video, White: Audio Left, Red: Audio Right, Shielding Cover: Ground;

● AV in and AV out are passing through the same port. To use AV in mode, need to switch off RF, otherwise there is a conflict;

● Earphone jack supports standard 3.5mm 3-pole audio jack connector; volume can be adjusted by adjustable earphone.

11. LENS INSERTS:

On the goggles, corrective lens insert slots are available and you may insert -2,-4 or -6 lenses in the market directly for use. Need to remove foam cover first, and then insert left and right lens into the slots (lens smooth side needs to face outward , the threaded side needs to face inward).

12. POWER SUPPLY:

The goggles come with 5.5*2.1mm DC barrel connector (inner positive, outer negative) for power supply, its working voltage range as DC7-18V (2S-4S battery). While using a 2S battery, if voltage drop to 6.8V, low voltage alarm will be activated and start beeping; if using a 3S battery, if

voltage drop to 10.3V, low voltage alarm will be activated and start beeping; if using a 4S battery, if voltage drop to 13.6V, low voltage alarm will be activated and start beeping. Press any button to display voltage and channel status on screen.

13. BUZZER FUNCTION:

- Each time power on when initialization process completed, the buzzer will long beep once;
- Each time when change channel, the buzzer will short beep once;
- Each time when change band, the buzzer will beep twice;
- When head tracker activated, the buzzer will beep twice; and when head tracker switched off, the buzzer will beep twice;
- When head tracker direction change, the buzzer will short beep once;
- When start to auto scan active channel, the buzzer will beep three times.
- When goggles idle for a long time, the buzzer will start beeping to warn user that the power is still on.

14. TROUBLE SHOOTING:

- When power on, no image display on screen:
1) Make sure power supply to the goggles are normal;
2) Verify if the goggles' channel frequency is the same as transmitter side;
3) See if transmitter side is working as normal;
4) Check if display mode on goggles has been selected correctly.

- Head tracker is not working:

1) See if pan/tilt servo cable are plugged into the right port on R/C receiver;

2) Check if the data cable between the goggles and radio controller is properly connected;

3) Verify the trainer function of radio controller is switched on and the channels are selected right;

4) Make sure all cable connectors are firmly plugged into ports.

● The wireless video signal received by the goggles is poor or the transmitting range is too close:

1) Check if there is any other device nearby is transmitting at the same frequency;

2) User should avoid using the goggles under high magnetic field environments like parking lot, train station, airport, military base, radar station and power plant, etc.;

3) Verify if the SMA connectors on goggles are in good condition, and the antenna should be mounted on properly and kept in good form;

4) Ensure transmitter and receiver are set on the same channel frequency;

5) The goggles and transmitter should be used in a wide open area and avoid obstacles like building, trees or other steel construction blocking signal in between.