ASCENT GOGGLES

Quick Start Guide

V1.0

Introduction

This product is a wireless image transmission head-mounted display device, compatible with Ascent HD System series air unit products, and can achieve long-distance, low-latency, high-definition wireless image transmission. In the document, the terms VTX, Air unit, etc. refer to Ascent image transmission camera products. In the document, the terms VRX, Goggles, etc. refer to Ascent image transmission display products.

1. Built-in Antenna
2. Link Button
(Short press to enter the linking state, long press for 8 seconds to enter the upgrade state)
3. Volume Button
(Press to start or stop video recording)
4. Power Button
(Press to return to the previous menu or exit the current mode)
5. SD Button
(Toggle the button to scroll through the menu. Press the button to confirm)
6. Power Port
(Voltage range: 6V~25.2V, DC 5.5*2.1)
7. Micro SD Card Slot
8. Frame Mounting Holed

Linking

1. Connect the VTX and the power of the Goggles.
2. Wait for about 10 seconds, the Goggles will respectively (as shown in the picture), where the VTX enters the pairing state The indicator light turns red, and the Goggles red a b. Di... Di...
3. After the link is successful, the indicator light on the VTX turns solid green, the beeping sound on the Goggles stops and the screen is displayed.

Upgrade

Please go to the official website to download the upgrade firmware, Ascent_L_Goggles_V1.X.img in the Goggles file, copy it to the SD card, be careful not to change the file name.

1. Copy the upgrade file to the root directory of the SD card, connect to the power supply and wait for the device to initialize and recognize the upgrade firmware first if there is one.
2. Press and hold the link button on the Goggles for 8 seconds, and the Goggles will respectively (as shown in the picture) red a b. Di... Di... Do not power off during the upgrade process, the upgrade time on the goggle is about 1 minutes!
3. After the upgrade is successful,and the beeping sound stops after the Goggles beeps for 5 seconds.

Status indication

Goggles Buzzer Status

Link state	Di... Di... Di... Di...
Upgrade firmware	Di... Di... Di... Di------
Upgrade failed (No SD card or firmware detected)	Di. Di. Di. Di.
Boot failure (Reboot or re-upgrade)	Di... Di... Di... Di.....

Precautions

1. This is a commercial product. Failure to operate this product in a safe and responsible manner could result in injury or damage to the product or other property. It must be operated with caution and common sense and requires some basic mechanical knowledge.
2. The power supply of VTX and Goggles is only 1bmW when the standby mode is on.
3. There are up to three channels for the goggles depending on the region. Bandwidth of 10MHz and 20MHz.
4. It is recommended to upgrade VTX and Goggles to the latest firmware before first use.

Operating channel

Central frequency (MHz)	Channel	Channel
FCC	5740	5770
CE/SRRC	5740	5770

Make sure you fully understand and abide by local laws and regulations before using this product. Users who use the amateur frequency bands with modified or crossed versions without a license may be prohibited for breaking local laws or regulations.

FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Specific Absorption Rate (SAR) Information:

This Ascent Goggles complies with government requirements for exposure to radio waves. The Ascent Goggles is designed and manufactured to not exceed emission limits for exposure to radio frequency energy set by government agencies of scientific studies. These standards include a substantial safety margin designed to ensure the safety of all individuals, regardless of age and health.

FCC RF Exposure Information and Statement:

The SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of body tissue, and 4.0 W/kg averaged over 10 grams for extremities. Ascent Goggles VTX (FCC ID:2ZJ2-1) has also been tested for compliance with these SAR limits. During product certification, the highest reported SAR value was 0.612 W/kg for the body, and 0.139W/kg for extremities. This device has been tested for typical body operations with the back side of the unit kept 0.5 cm from the transmitter. From the body, To maintain compliance with FCC RF exposure requirements, accessories that maintain a 0 mm separation distance between the user's body and the back of the unit should be used. Belt clips, holsters, and similar accessories used with this device should not contain metallic components. Accessories not meeting these requirements may not comply with FCC RF exposure requirements and should be avoided. Use only the supplied or approved antenna.

Software interface

Main interface~1

1-VTX input voltage:
Detect VTX voltage, intelligently identify the voltage of 2, 3, 4, 6 string LiPo batteries, alarm when it is low (battery is lower than 3.5V, and alarm in red font when the voltage is low.

2-Goggles input voltage:
Detect Goggles low battery alarm, intelligently identify the voltage of 2, 3, 4, 6 string LiPo batteries, alarm when it is low (battery is lower than 3.5V, red font and buzzer alarm when the voltage is too low.

3-Real-time Bit rate:
Display real-time transmission bitrate in Mbps, with 10.0M and 20.0M bandwidth mode.

4-Ranging mode:
The function of calculating the transmission distance from Goggles to VTX according to the wireless transmission delay, the signal is interfered will lead to error amplification.

5-Status prompt:
The text prompt information that needs attention in the current state.

7-Current channel:
Display the current setting channel, the signal grid has 5 states, 4 grids, 3 grids, 2 grids, 1 grid, and blank.

8-Goggles SD card status:
Display the status and remaining capacity of the Goggles SD card. When recording, the red circle flashes to prompt, the status of the SD card not recognized or full is displayed, and the status of the memory is full is displayed.

9-Remote Controller Signal Status:
There are five signal bar states: 4 bars, 3 bars, 2 bars, 1 bar, and no bar. When no remote controller signal is detected by the image transmission module, this icon will be hidden.

Menu Channel~2

1-Channel:
Displays the interference status of each channel. Signal strength is shown as 4 bars, 3 bars, 2 bars, 1 bar, or empty. An empty signal bar indicates the channel is occupied and cannot be selected. A yellow frame represents the selection box. Press the confirm button to highlight a channel, and the highlighted one is the current channel.

2-Frequency Hopping:
When frequency hopping is enabled, the goggles will automatically select the channel with the least interference. Manual channel switching is not available in this mode.

3-Refresh:
Click Refresh to re-scan all channels and update their interference status.

Menu Settings~4

1-Camera:
The adjustable contents of the camera are scene preset, EV value, saturation, sharpness, white balance, rotate, ratio, 3D DNR, Shutter, and Max ISOsettings.

2-Display:
Display adjustable content is Debug, brightness, focalization mode, custom OSD, OSD position, font upgrade, custom font, viewfinder, viewfinder edit settings.

3-Refresh set:
Refresh settings can be adjusted as VTX REC resolution, REC device, take off REC, REC stop control, VTX REC, VTX Built-in SD, Built-in ED, REC Time, REC Format, Colour, Saturation, Sharpness.

4-Device:
Adjustable settings include Buzzer Volume, Ranging Mode, Signal Loss Alert, Passive Factory Settings, Reset VTX Defaults, Device Information, User Guide, Mode Switching, Dark Brightness, Light, and Anti-Flicker.

5~Transmission Power:
Default selection transmission power: 25 mW, 100 mW.

6~Resolution:
Selectable resolutions: 720P and 1080P.

7~Bandwidth:
Selectable 10.0M and 20.0M options for different image quality. Higher bitrate is only supported when FCC mode is enabled.

8~Frame Rate:
The standard frame rate is equal to 60fps.

9~Standby Mode:
In standby mode, both the air unit and goggles transmit at 10 dBm transmission power will only return to the configured value after setting standby mode or turning it off. This function requires the air unit to be properly connected to the flight controller via serial port—when the goggles detect an arming signal from the aircraft, standby mode exits automatically. If no flight controller is supported, this function can be disabled.

1~Language:
Language switching English/中文.

11~Battery Alarm:
Intelligently identify the battery status of the goggles. When voltage is too low, a red text warning and buzzer alert will be triggered. This feature can be enabled or disabled.

12~Preferences:
Preset transmission modes: Smooth, High Quality, Long Range.

Menu Playback~5

1、The OSD switch can be turned on or off. When it is turned on, the flight control OSD information (if any) and the flight information of the main interface will be superimposed on the playing video interface. When the playback interface is in the video playback state, the left and right arrow keys can be used to fast-forward/rewind. When the video is paused, the video playback function settings (delete, select all , cancel), press the return key again to exit the multi-selection mode.

2、On the playback interface, click the middle button to pause/play, and the left and right arrow keys to adjust rewind/fast forward

Specifications

Name	Ascent Goggles
Communication Frequency	5.738-5.806GHz
Transmitter Power(EIRP)	FCC=25dBm, CE=14dBm, SRRC=20dBm
I/O Interface	DC5.5*2.1mm, Micro SD Card Slot
Transmission Resolution	1080p60fps, 720p60fps
Code Rate	Max 25 Mbps
Min. Latency	Average 32ms
Average Gain	4.9dBi
Polarization	LHCP
Transmission Distance	>4km
Channel	8
Screen Resolution	1920*1080,60Hz
Screen Size	LCD
Screen Size	4.5 Inch
Power Input	6V-25.2V(2S-6S)
SD card	Support 256G
System	Ascent HD system

CADDXFPV SUPPORT

email: support@caddxfpv.com

ASCENT GOGGLES

快速入门指南

V1.0

简介

该产品为无线图像传输头戴显示设备，兼容 Ascent HD System 系列天空端产品。可实现这款高性能对高清无线图像传输，文传中继还，VTX，发射器，天空端等现代无线产品系列的图像头戴产品。文传中继还，VTX，接收端，眼镜端等现代无线 Ascent 图传显示器产品。