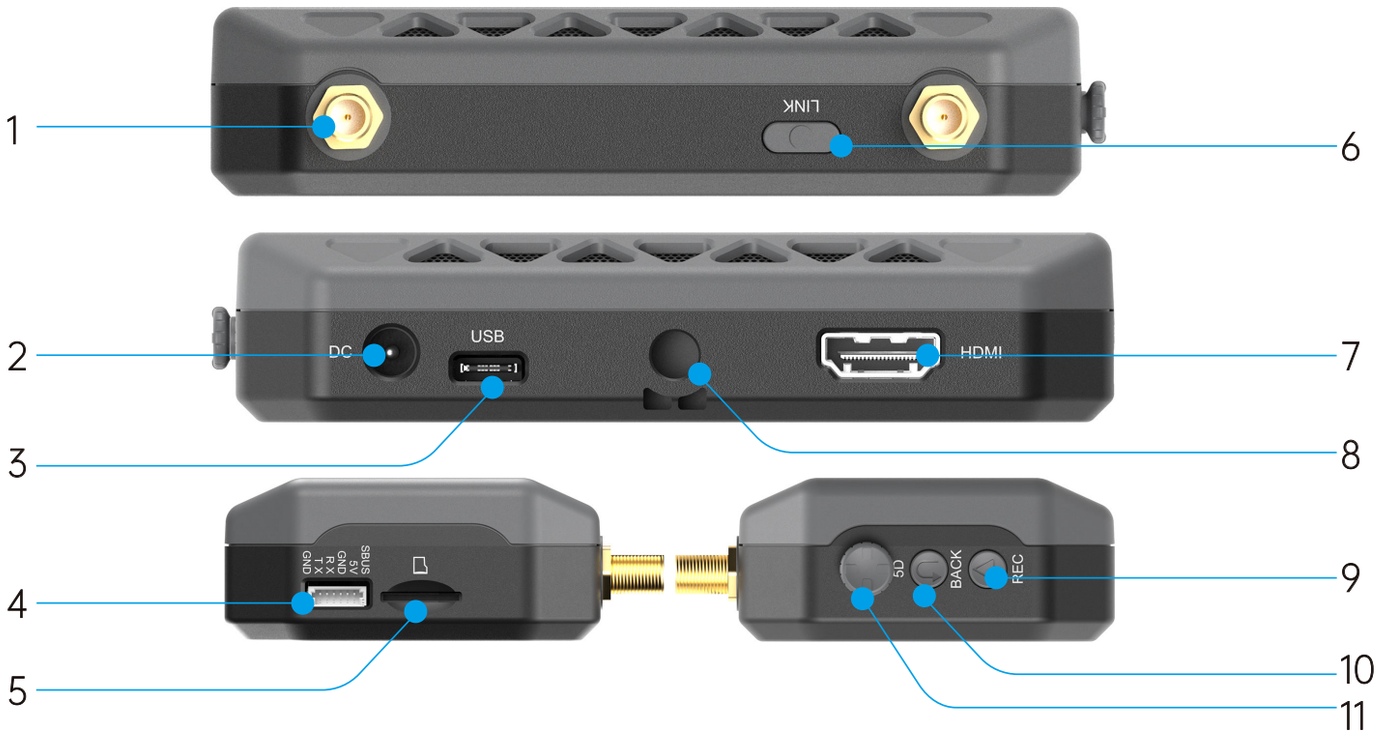
ASCENT VRX

Quick Start Guide

V1.0

Introduction



1. Antenna base
2. Power supply [1]
3. USB-C Interface
4. Passthrough Interface
5. SD card slot
6. Link button
7. HDMI out
8. 1/4 thread mouth
9. Record button
10. Back button [2]
11. 5D button

[1] DC 5.5*2.1mm, Input Voltage range 7.4–25.2V.

[2] Press the back button for 8 seconds to return 720p/60fps.

Linking

1. Connect the VTX and the power of the VRX.
2. Press the link button of the VTX and VRX respectively (as shown in the picture), when the VTX enters the pairing state The indicator light turns red, and the VRX end is a DI... DI... DI...
3. After the link is successful, the indicator light on the VTX turns solid green,

the beeping sound on the VRX stops and the screen is displayed.

Upgrade

SD Card

Please go to the official website to download the upgrade firmware, Ascent_G_Gnd_X_X_X.img is the VRX file, copy it to the SD card, be careful not to change the file name.

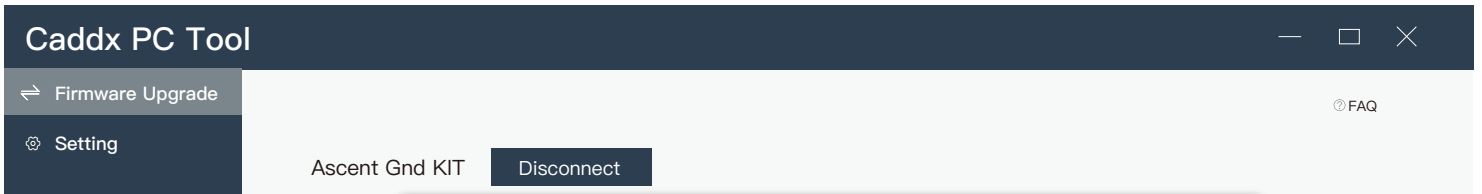
1. Copy the upgrade file to the root directory of the SD card, connect to the power supply and wait for the device to initialize (delete the old firmware file first if there in one).
2. Press and hold the link button on the VRX for 8 seconds, and the VRX automatically restart and emit a beep...beep...beeper sound. (Do not power off during the upgrade process, the upgrade time on the VRX is about 1 minutes)
3. After the upgrade is successful,and the beeping sound stops after the VRX beeps for 5 seconds.

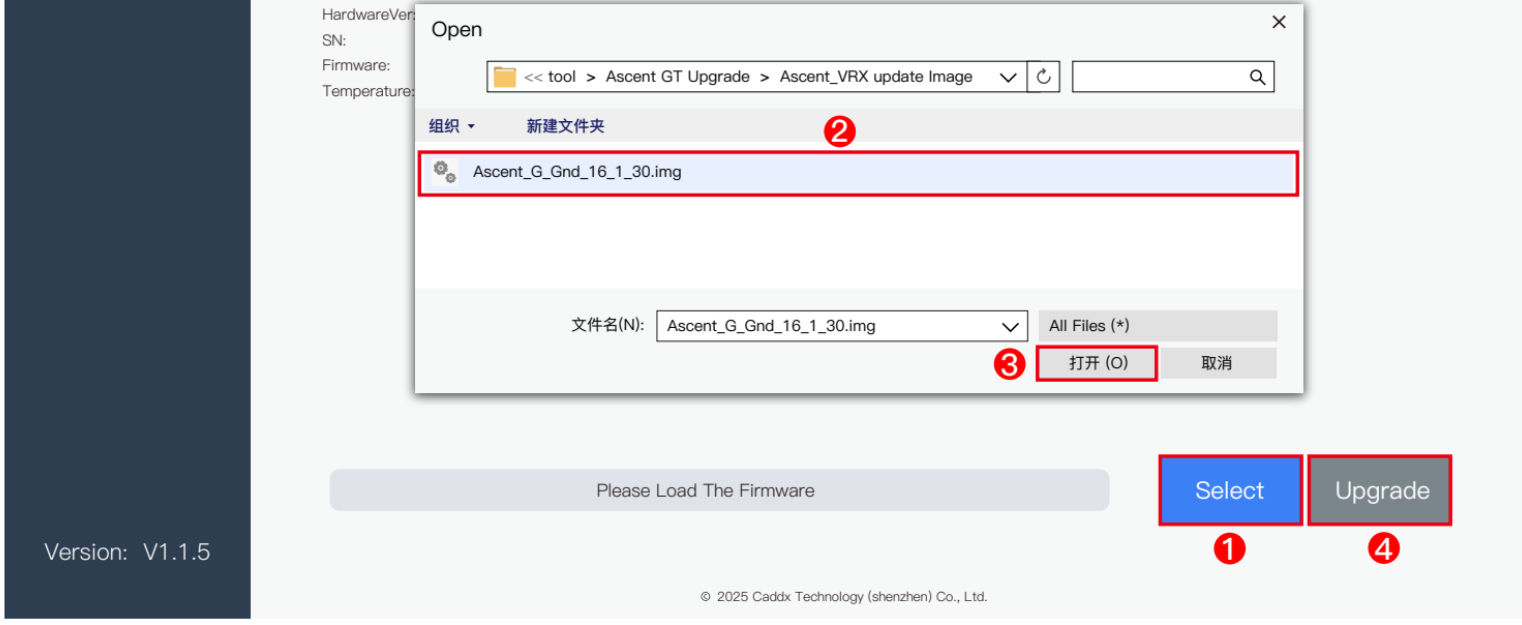
It is recommended to perform a factory reset after the upgrade is completed.
Note: When upgrading the VRX to a new firmware version, please upgrade the VTX to the firmware version corresponding to the VRX. After upgrading the VTX, select 'Reset VTX Parameters' on the VRX.

USB Interface

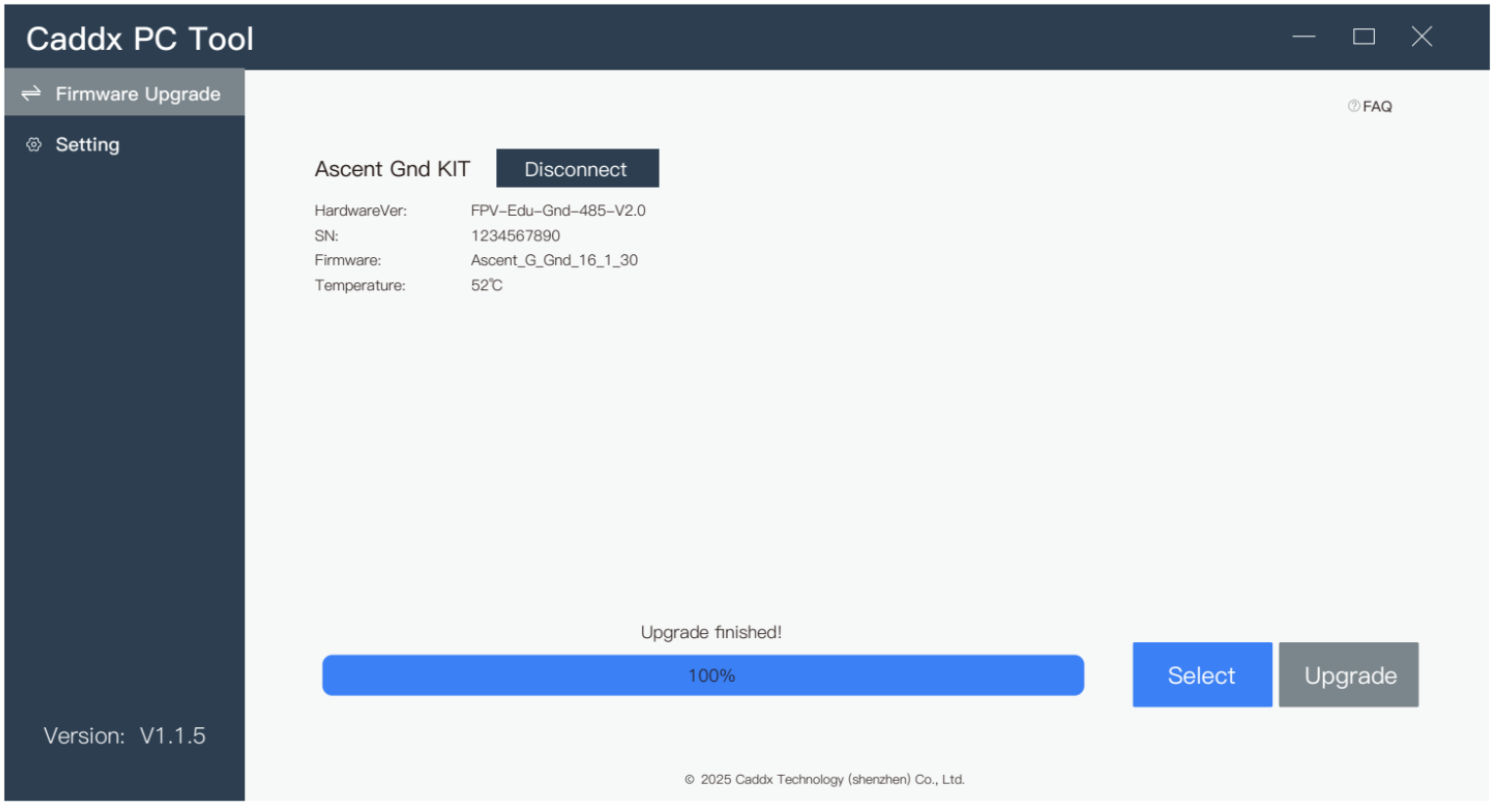
Please download the latest upgrade tool and firmware from the official website. The Ascent_G_Gnd_X_X_X.img corresponds to the headset-side firmware upgrade. Do not rename the file.

1. Open the Caddx_PC_Tool on your computer. When the VRX side is connected to the computer via a USB cable and powered on, you can follow the prompts to select the Ascent_G_Gnd_X_X_X.img firmware for the upgrade.





2. Follow the above steps, and wait until the upgrade progress bar finishes to complete the upgrade.



Note: When upgrading the Ascent VRX, an external battery must be connected to the DC port for power.

Status indication

VRX 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 sophisticated 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 transmit power of VTX and VRX is only 10mW when the standby mode is on.
3. There are up to three channels for the VRX depending on the region. Bandwidth of 5MHz, 10MHz, 20MHz.
4. It is recommended to upgrade VTX and VRX to the latest firmware before first use.

Operating channel

Central frequency(MHz)	Channel1	Channel2	Channel3
FCC	5740	5770	5805
CE/SRRC	5740	5770	5805

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

Operating channel

Link button

Short press to enter the linking state, long press for 8 secondsto enter the upgrade state.

5D button

Toggle the button to scroll through the menu. Press the button to confrm.

Back button

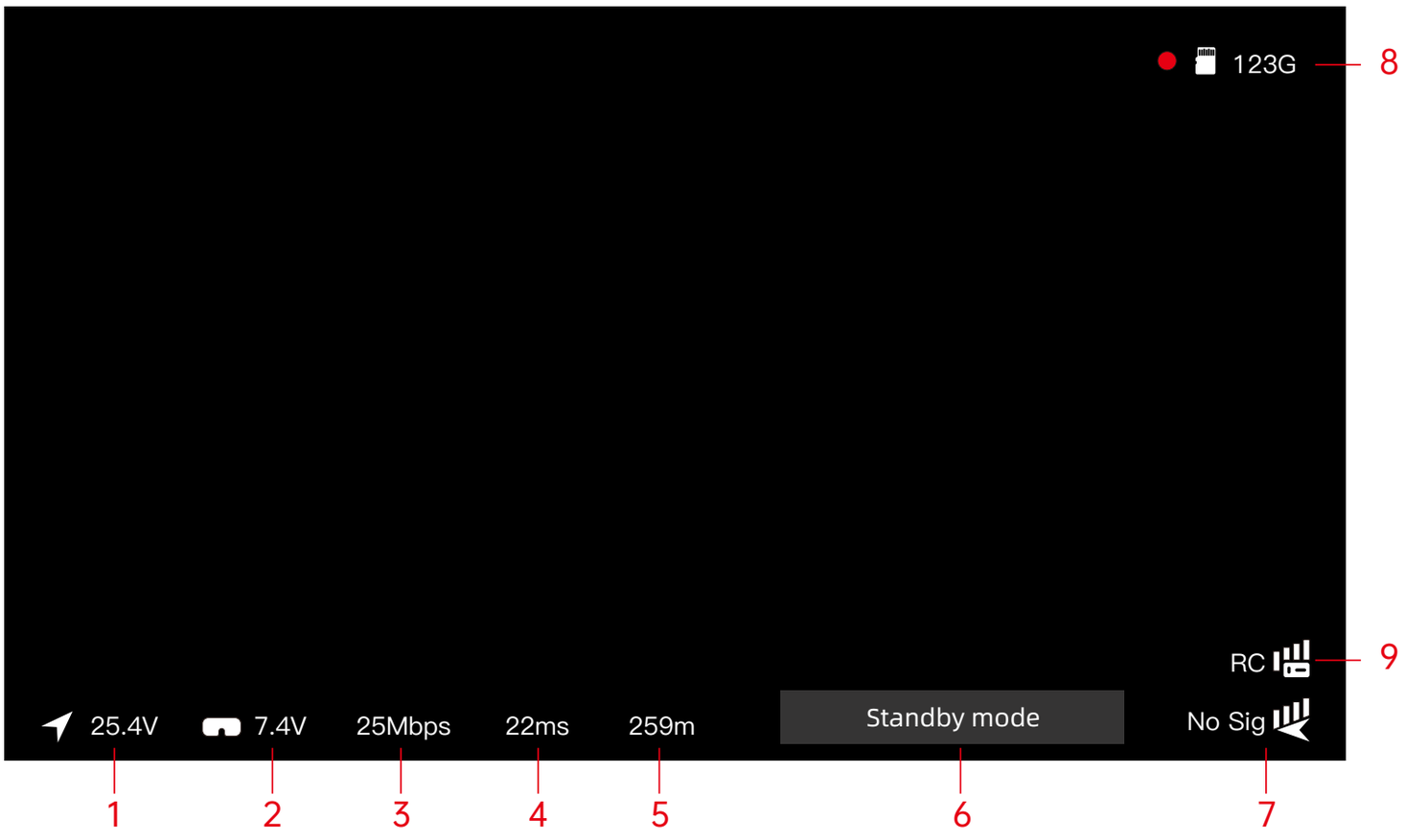
Press to return to the previous menu or exit the current mode, Press and hold for 8 seconds to restore HDMI output to 720P60FPS

Record button

Press to start or stop video recording

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 a single battery is lower than 3.5V, and alarm in red font when the voltage is too low.

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

3–Real–time Transmission Bitrate:
Display real–time transmission bitrate in Mbps.

4–Time delay:
Displays the total delay from the transmission of images captured by the VTX camera to the ground end.

5–Ranging mode:
The function of calculating the transmission distance from VRX to VTX according to the wireless transmission delay, the signal is interfered will lead to error amplification。

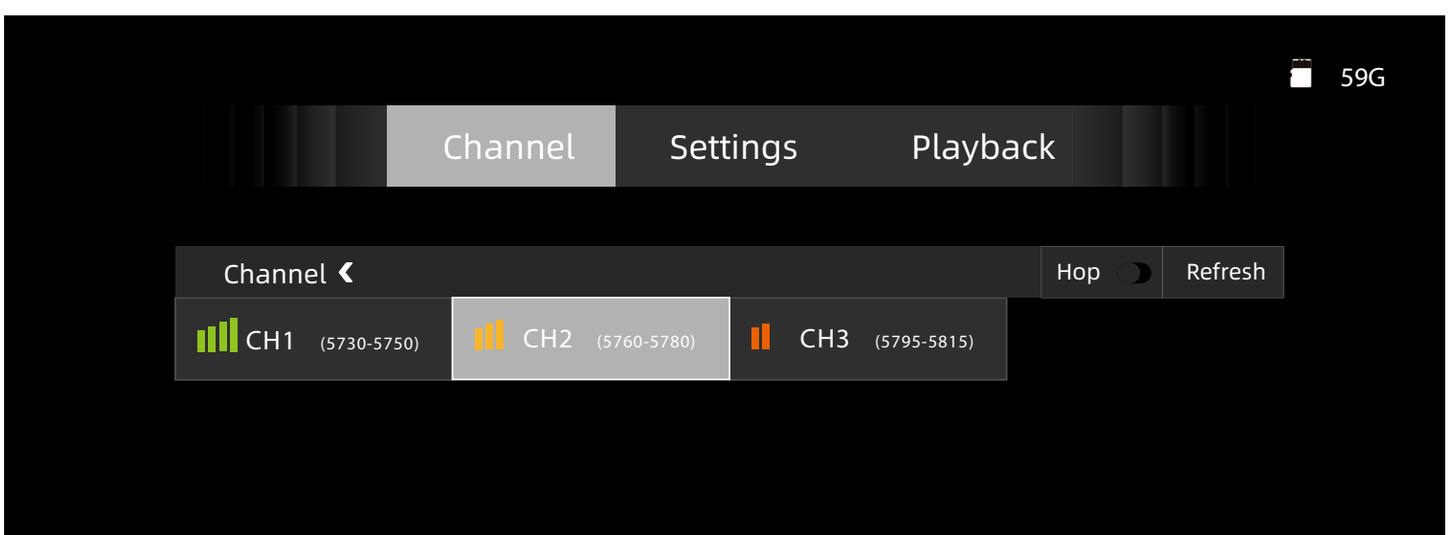
6–Status prompt:
The text prompts information that needs attention in the current state.

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–VRX SD card status:
Display the status and remaining capacity of the VRX SD card. When recording, the red circle flashes to prompt, the status of the SD card not detected is displayed as NO SD, and the status of the memory is full is displayed as –.

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

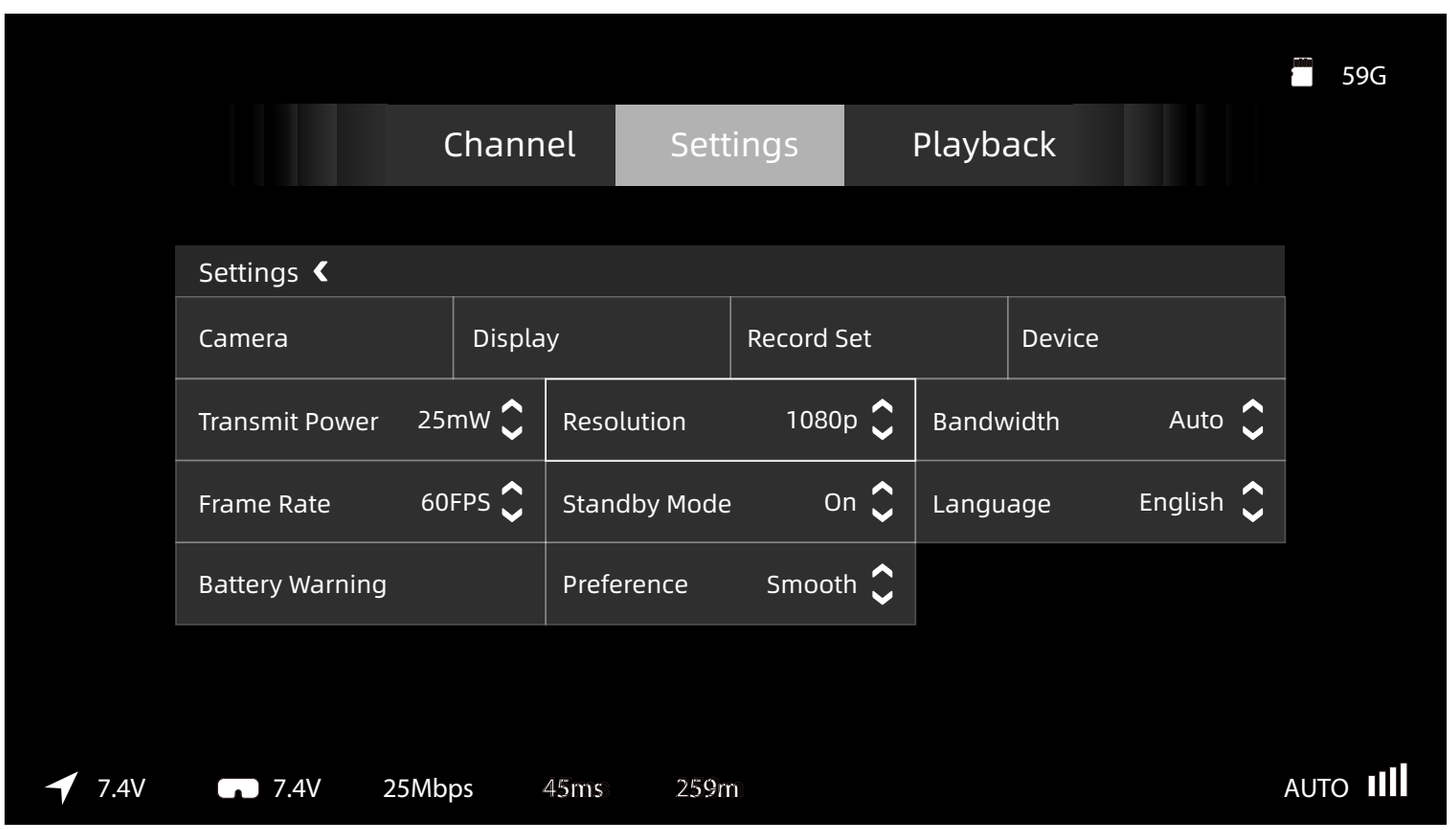


1–Channel:
Displays the interference status of each channel. Signal strength is shown as 4 bars, 3 bars, 2 bars, 1 bar, or empty. An empty signal bar indicates the channel is occupied and cannot be selected. A white outline represents the selection box. Press the confirm button to highlight a channel, 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:
The recording can be adjusted as VTX REC resolution, REC device, take off REC, REC loop, format SD card, format VTX, Built-in EIS, REC Time, REC Format, Color, Saturation, Sharpness.

4-Device:
Adjustable settings include Buzzer Volume, Ranging Mode, Signal Loss Alert, Restore Factory Settings, Reset VTX Defaults, Device Information, User Guide, Mode Switching, DVR Bitrate (VRX), and Anti-Flicker.

5-Transmission Power:
Default selectable transmission power: 25 mW, 100 mW.

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

7-Bandwidth:
Supports selectable 5 MHz, 10 MHz, and 20 MHz bandwidth modes.
In theory, the smaller the bandwidth, the better the interference resistance but the lower the data rate; the larger the bandwidth, the weaker the interference resistance but the higher the data rate.

8-Frame Rate:
Adjust the HDMI Output Frame Rate.
If the display does not support a high frame rate, press and hold the Back button for 8s, and the HDMI output will be switched to 720P60.

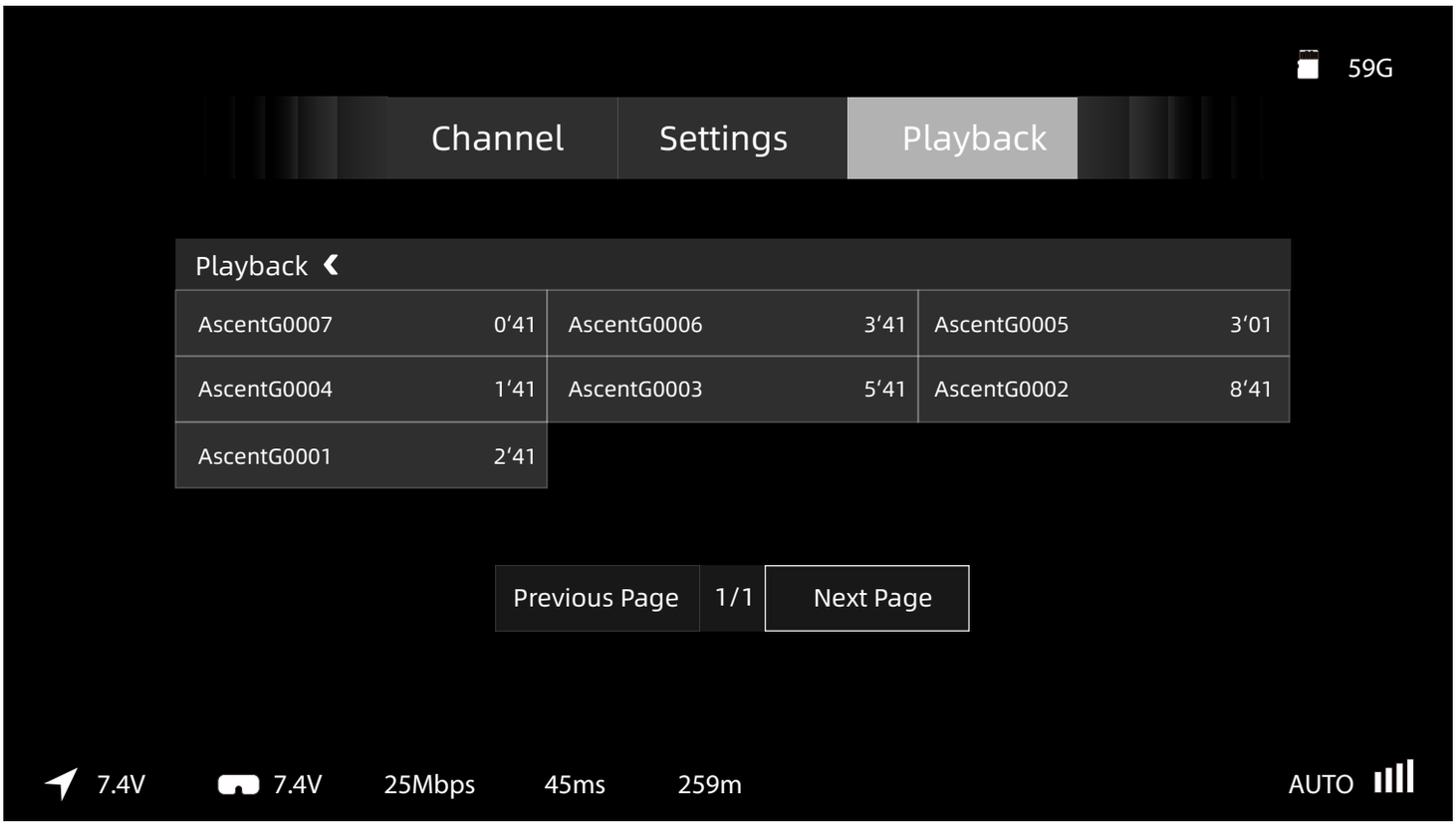
9-Standby Mode:
In standby mode, both the air unit and VRX transmit at 10 dBm. Transmission power will only return to the configured value after exiting standby mode or turning it off. This function requires the air unit to be properly connected to the flight controller via serial port—when the VRX detect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

10-Language:
Language switching English/中文.

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

12-Preferences:
The image transmission system provides preset working modes. You can choose Low Latency Mode or Fixed-Wing Mode according to your preference.

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 selection box stays in the video list, press and hold the VRX confirmation key to open the multi-selection function, and the menu box will display 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 VRX
Model	WN02-FP018
Communication Frequency	5.725-5.829 GHz
Transmitter Power(EIRP)	FCC/SRRC:<30dBm, CE:<14dBm

I/O Interface	HDMI, Micro SD Card, DC5.5*2.1mm SH1.0*6PIN, Type-C
HDMI Out	1080p50fps, 1080p60fps, 720p50fps, 720p60fps, 720p100fps, 720p120fps
Power Input	7.4~25.2V
SD Card	Support Micro SD 256G
System	Ascent HD system
Bandwidth	5MHz/10MHz/20MHz
Recording File System	exFAT
Recording Format	MP4 (H.264)
Weight	118g
Dimension	114.5*64*24mm

Name	Red bird
Polarization	LHCP
Bandwidth	5.725-5.829 GHz
Average Gain	2dBi
Radiation Efficiency	⩾97%
VSWR	⩽1.3
Cross-Polar Rejection	-15to-30dB
Connector	RP - SMAx2
Dimension	25*15.5mm
Weight	4.3g

CADDXFPV SUPPORT
email: support@caddxfpv.com