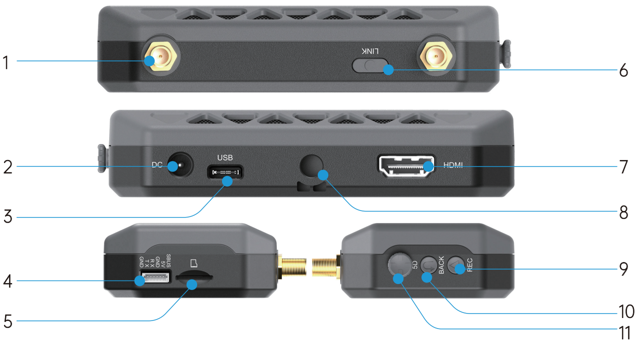
ASCENT VRX

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

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[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 Dl... Dl... Dl...
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.

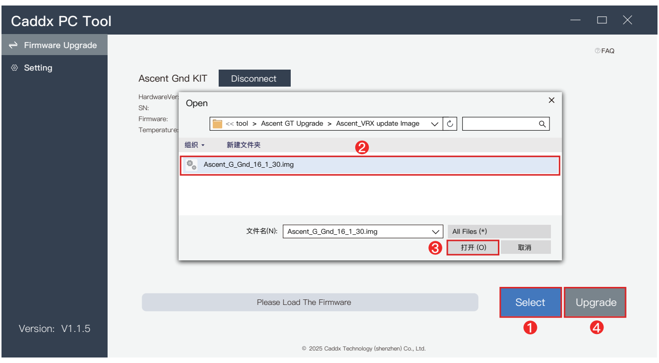
1. Copy the upgrade file to the root directory of the SD card, connect to the power supply and wait for the device to initialize (delete the old firmware file first if there in one).
2. Press and hold the link button on the VRX for 8 seconds, and the VRX automatically restart and emit a beep...beep...beeper 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 VTX 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.



Caddx PC Tool

Ascent Gnd KIT

Open

<< tool > Ascent GT Upgrade > Ascent_VRX update Image

Ascent_G_Gnd_16_1_30.img

文件名(N): Ascent_G_Gnd_16_1_30.img

All Files (*)

Please Load The Firmware

Version: V1.1.5

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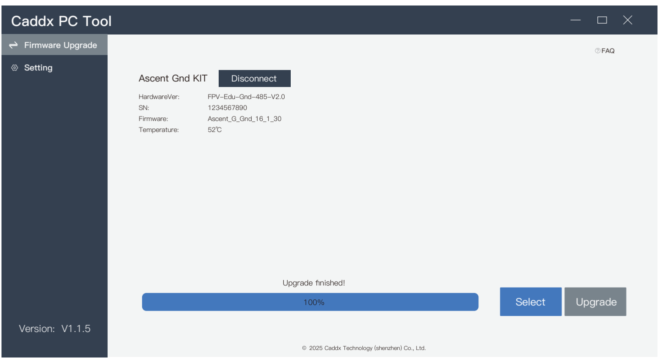
2. Follow the above steps, and wait until the upgrade progress bar finishes to complete the upgrade.



Caddx PC Tool

Ascent Gnd KIT

HardwareVer: FPV-Edu-Gnd-485-V2.0
SN: 1234567890
Firmware: Ascent_G_Gnd_16_1_30
Temperature: 52℃

Upgrade finished!

100%

Version: V1.1.5

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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	Dl.... Dl.... Dl.... Dl....
Upgrade firmware	Dl...... Dl...... Dl...... Dl——
Upgrade failed (No SD card or firmware detected)	Dl.. Dl.. Dl.. Dl..
Boot failure (Reboot or re–upgrade)	Dl.. Dl...... Dl.. Dl......

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 10MHz and 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.

Operating channel

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

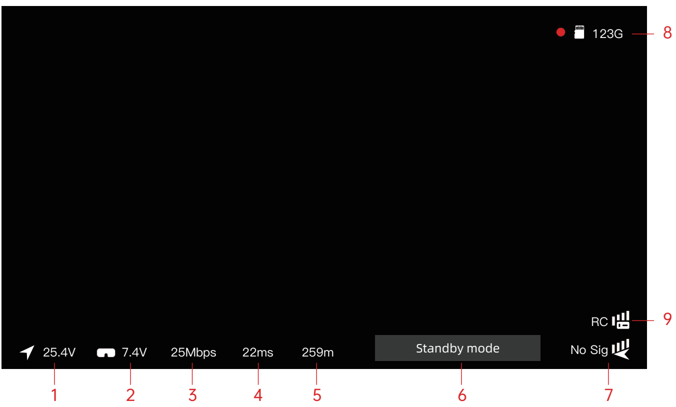
5D button
Toggle the button to scroll through the menu. Press the button to confrm.

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 720P60

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。

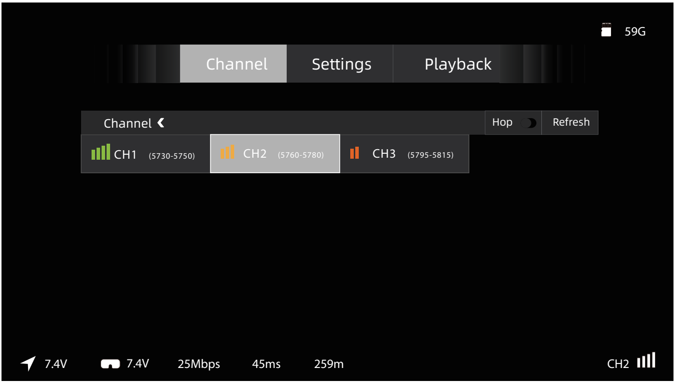
6–Status prompt:
The text prompts information that needs attention in the current state.

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

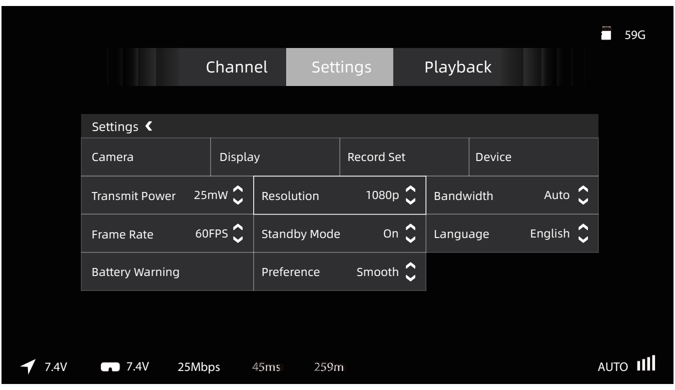


1–Channel:
Displays the interference status of each channel. Signal strength is shown as 4 bars, 3 bars, 2 bars, 1 bar, or empty. An empty signal bar indicates the channel is occupied and cannot be selected. A white outline represents the selection box. Press the confirm button to highlight a channel,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



Transmit Power 25mW
Resolution 1080p
Bandwidth Auto
Frame Rate 60FPS
Standby Mode On
Language English
Preference Smooth

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

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.

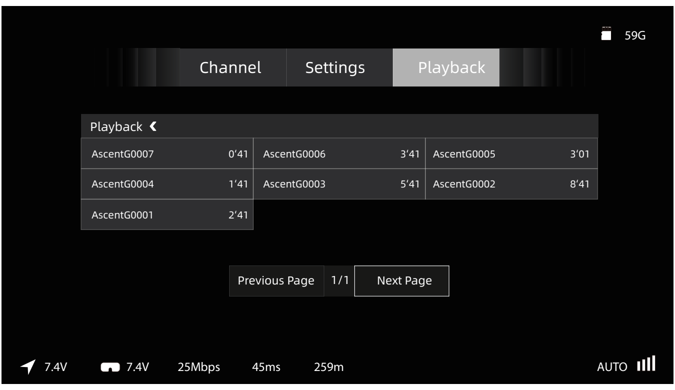
9–Standby Mode:
In standby mode, both the air unit and VRX transmit at 10 dBm. Transmission power will only return to the configured value after exiting standby mode or turning it off. This function requires the air unit to be properly connected to the flight controller via serial port—when the VRX detect 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



AscentG0007	0'41	AscentG0006	3'41	AscentG0005	3'01
AscentG0004	1'41	AscentG0003	5'41	AscentG0002	8'41
AscentG0001	2'41				

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
Control capability	One controller, one aircraft

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

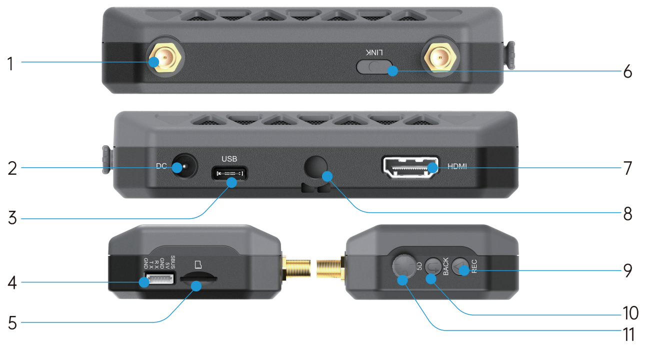
CADDXFPV SUPPORT
email: support@caddxfpv.com

ASCENT VRX

快速入门指南

V1.0

简介


1
2
3
4
5
6
7
8
9
10
11
LINK
DC
USB
HDMI
SBUS 5V GND RX TX GND
5D
BACK
REC

1. 天线座
2. 电源输入[1]
3. USB-C接口
4. 透传接口
5. SD卡槽
6. 对频键
7. HDMI输出
8. 1/4螺纹口
9. 录制键
10. 返回键[2]
11. 五维按键

[1] DC 5.5*2.1mm，输入电压7.4~25.2V

[2] 长按8秒切换为720P/60fps标准帧率

对频

1. 连接 VRX 和 VTX 天空端电源。
2. 等待设备启机后，分别按下 VRX 和 VTX 天空端对频按钮，当进入配对状态时，VTX 指示灯变为红色，VRX 发出滴… 滴… 滴…蜂鸣器提示。
3. 对频成功后，VTX 上的指示灯变为绿色常亮，VRX 蜂鸣器停止并显示图传画面。

升级

SD卡

请到官网下载最新升级固件，Ascent_G_Gnd_X_X_X.img 对应VRX升级固件，拷贝到 VRX端 SD 卡中，注意请勿修改文件名。

1. 将升级文件复制到 VRX端SD 卡的根目录下，连接电源并等待设备启机（如果有，请先删除旧固件文件）。
2. 长按VRX对频按钮 8 秒后蜂鸣器长响一秒后松开，等待设备自动重启后发出蜂鸣器提示音滴……滴……滴……(升级时间大约为1分钟，中途请勿断电)
3. 升级成功后，VRX蜂鸣器长响5秒后停止并自动重启。

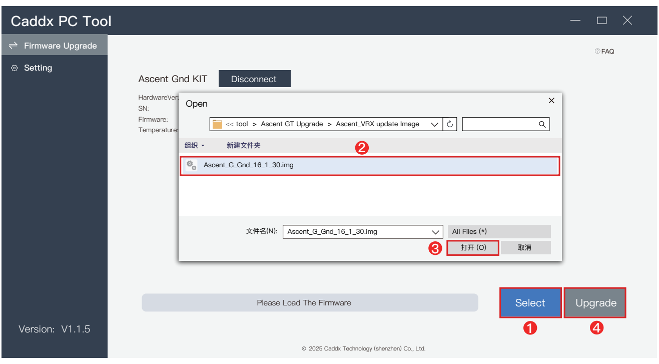
建议升级完成后做一次恢复出厂设置。

注意: VRX端在升级新固件版本时，请将VTX升级至与VRX端对应的版本固件，VTX升级后请在VRX端上选择重置VTX参数。

USB接口

请到官网下载最新升级工具和固件，Ascent_G_Gnd_X_X_X.img 对应VRX升级固件，注意请勿修改文件名。

1. 在电脑上打开 Caddx_PC_Tool 的工具，VRX端连接USB线并接通电脑时，可根据提示选择 Ascent_G_Gnd_X_X_X.img 固件进行升级。


Caddx PC Tool
Firmware Upgrade
Setting
FAQ
Ascent Gnd KIT
Disconnect
HardwareVer:
SN:
Firmware:
Temperature:
Open
<< tool > Ascent GT Upgrade > Ascent_VRX update Image
组织
新建文件夹
②
Ascent_G_Gnd_16_1_30.img
All Files (*)
③
打开 (O)
取消
Please Load The Firmware
Select
Upgrade
❶
❹
Version: V1.1.5
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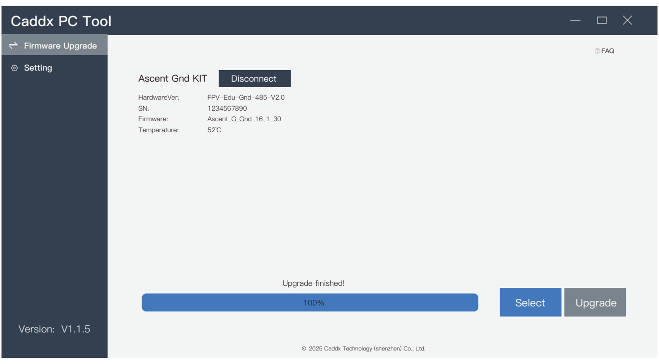
文件名(N): Ascent_G_Gnd_16_1_30.img

2. 根据上述步骤操作，等待升级进度条结束即完成升级。


Caddx PC Tool
Firmware Upgrade
Setting
FAQ
Ascent Gnd KIT
Disconnect
Select
Upgrade
Version: V1.1.5
© 2025 Caddx Technology (shenzhen) Co., Ltd.

HardwareVer: FPV-Edu-Gnd-485-V2.0
SN: 1234567890
Firmware: Ascent_G_Gnd_16_1_30
Temperature: 52℃

Upgrade finished!

100%

注意： Ascent VRX升级的时候需要DC口连接外部电池供电。

状态指示

VRX蜂鸣器状态	
对频状态	滴.... 滴.... 滴.... 滴....
升级固件	滴...... 滴...... 滴...... 滴——
升级失败（未检测到SD卡或固件）	滴.. 滴.. 滴.. 滴..
启机失败（重启或重刷固件）	滴.. 滴...... 滴.. 滴......

注意事项

1. 该产品使用较为复杂，使用者需具备基本的动手能力以及安全常识，并且需要小心使用。
2. 待机模式开启且飞行器未解锁 VTX 和VRX发射功率受限于10mW。
3. VRX最多支持3个带宽为10MHz 和 20Mhz 的频道。
4. 首次使用建议将 VTX 和VRX升级到最新固件。

工作频道

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

使用本产品前，请确保您充分了解并遵守当地法律法规。

按键操作

对频按键
短按进入对频状态，长按8秒进入升级状态。

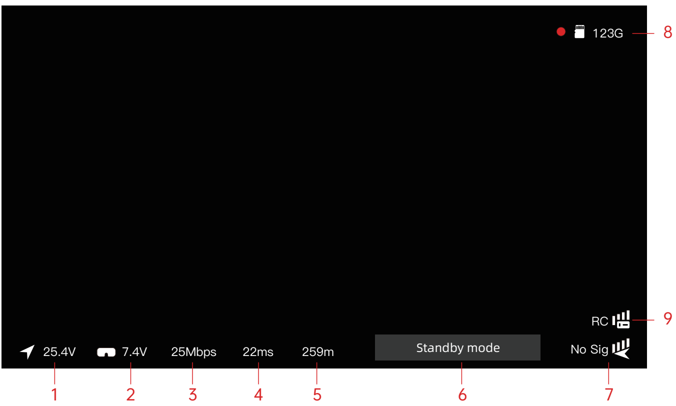
五维按键
上下左右控制菜单选择框方向，按下确认或取消选择。

返回键
按下可返回上一级菜单或当前模式，长按8秒恢复HDMI输出720P60。

录制键
按下可开始/暂停录像

软件界面

主界面–1


123G
8
RC
9
25.4V
7.4V
25Mbps
22ms
259m
Standby mode
No Sig
1
2
3
4
5
6
7

1-天空端输入电压
显示天空端供电电压，智能识别2、3、4、6串LiPo电芯电压，单片电芯低于3.5V红色字体报警提示。

2-地面端输入电压：
显示VRX供电电压，智能识别2、3、4、6串LiPo电芯电压，单片电芯低于3.5V红色字体和蜂鸣器报警提示。

3-实时传输码率
显示实时传输码率单位Mbps

4-图传延迟：
显示从发射端相机采集图像传输至地面端的总延时。

5-测距功能：
依据无线传输延时计算接收端至发射端传输距离功能，信号被干扰会导致误差放大。

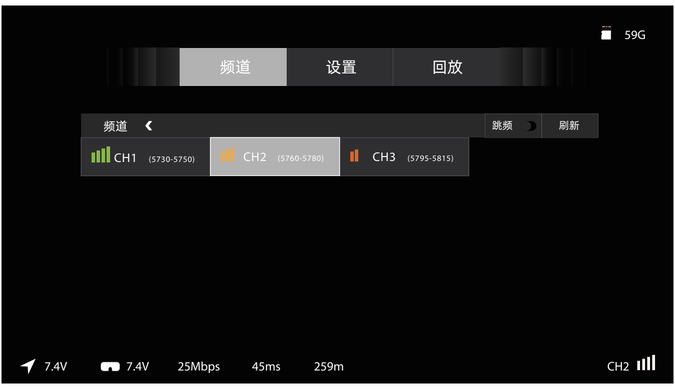
6-状态提示：
文字提示当前需注意的状态提示。

7-当前频道：
显示当前设置频道，信号格共5种状态，4格、3格、2格、1格、空格。

8-地面端SD卡状态：
显示 VRX 内存卡状态及剩余容量，录像时红圈闪烁提示，不在录制状态不显示红圈，检测不到SD卡状态显示为NO SD，卡满状态显示为–。

9-遥控器信号状态：
信号格共5种状态，4格、3格、2格、1格、空格，当图传未检测到遥控器信号时，此图标会隐藏。

菜单频道–2

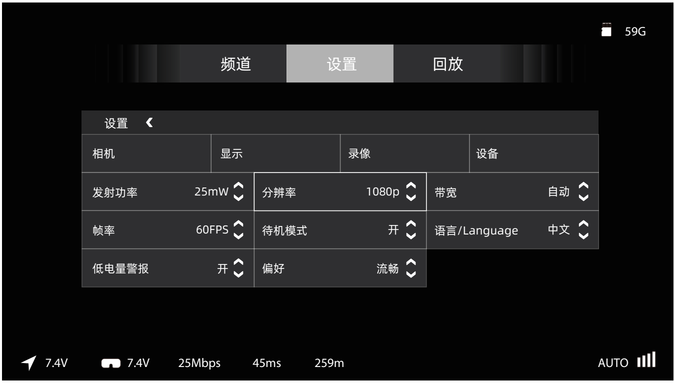

59G
频道
设置
回放
频道 ‹
跳频
刷新
CH1 (5730-5750)
CH2 (5760-5780)
CH3 (5795-5815)
7.4V
7.4V
25Mbps
45ms
259m
CH2

1–频道：
显示各频道的干扰情况，信号强度分为4格、3格、2格、1格、空格，信号显示空格为已被占用不可选，白色描边为选择框，按下确认键高亮显示，高亮显示为当前频道。

2–跳频：
开启跳频功能，VRX端将自动选择干扰较小的频道，此时不可手动切换频道。

3–刷新：
点击刷新可以重新搜索各个频道的干扰情况以及状态。

菜单设置–4


59G
频道
设置
回放
设置 ‹
相机
显示
录像
设备
7.4V
7.4V
25Mbps
45ms
259m
AUTO

发射功率 25mW
分辨率 1080p
带宽 自动
帧率 60FPS
待机模式 开
语言/Language 中文
低电量警报 开
偏好 流畅

1-相机：
相机可调整内容分别为场景预设、曝光、饱和度、锐度、白平衡、画面旋转、画面比例、3D降噪。

2-显示：
显示可调整内容为 Debug、屏幕亮度、聚焦模式、自定义OSD、OSD位置、升级字体、自定义字体、取景框、取景框设置、眼睛图标。

3-录像：
录像可调整内容为 VTX 发射端分辨率、录像设备、自动启停、循环录制、格式化SD卡、格式化发射端、录像时间。

4-设备：
设备可调整内容为蜂鸣器音量、测距模式、信号丢失提示、恢复出厂设置、重置发射端默认值、设备信息、操作说明、切换模式、VRX端录像码率、抗频闪。

5-发射功率：
发射功率默认可选择25mW、100mW功率。

6-分辨率：
分辨率可以选择720P和1080P。

7-带宽：
可选择自动、10M、20M带宽工作模式，理论上带宽越小抗干扰越好但码率较低，带宽越大抗干扰越差但码率较高。

8-帧率：
调整HDMI输出帧率。
如果显示屏幕不支持高帧率，可长按返回键8秒，则HDMI输出会调整为720P60

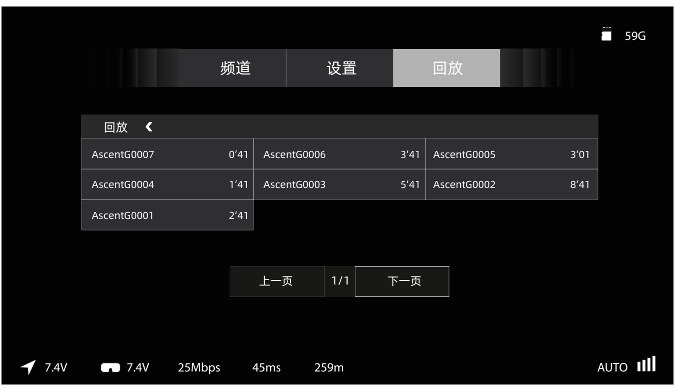
9-待机模式：
当处于待机模式时天空端和 VRX 端发射功率为10dbm，退出待机模式或关闭待机模式开关才会输出当前设置的发射功率，开启待机模式时此功能需要天空端串口正确连接飞控当VRX收到飞行器解锁信号时自动退出待机模式，如无飞控支持可选择关闭此功能。

10-语言/Language：
语言切换English/中文。

11-电池报警：
检测 VRX 端低电量警报，电压过低红色字体和蜂鸣器报警提示，可选择开启或关闭。

12-偏好：
图传工作模式预设功能，根据您的偏好可以选择低延迟/固定翼模式。

菜单回放–5


59G
频道
设置
回放
回放 ‹
上一页
1/1
下一页
7.4V
7.4V
25Mbps
45ms
259m
AUTO

AscentG0007	0′41	AscentG0006	3′41	AscentG0005	3′01
AscentG0004	1′41	AscentG0003	5′41	AscentG0002	8′41
AscentG0001	2′41				

1、选择框移动到OSD选项可以选择打开或关闭，打开时在播放视频界面叠加飞控OSD信息(如有)和主界面飞行信息，当选择框停留在视频列表中，长按 VRX 端确认键打开多选功能，菜单框显示功能设置（删除、全选、取消），再次按下返回键退出多选模式。

2、播放界面单击中键暂停/播放，左右方向键调整快退/快进

规格参数

名称	Ascent VRX
型号	WN02–FP018
通信频率	5.725–5.829 GHz
发射功率(EIRP)	FCC/SRRC:<30dBm, CE:<14dBm
接口	HDMI, MicroSD卡槽, DC5.5*2.1mm SH1.0*6PIN, Type–C
HDMI输出	1080p50fps, 1080p60fps, 720p50fps, 720p60fps, 720p100fps, 720p120fps
宽电源输入	7.4~25.2V
SD卡槽	支持Micro SD 256G
系统	Ascent HD system
工作带宽	5Mhz/10Mhz/20Mhz
录像文件系统	exFAT
录像格式	MP4 (H.264)
重量	118g
尺寸	114.5*64*24mm
控制能力	一机一控

名称	Red bird
极化方向	左旋圆极化(LHCP)
工作宽带	5.725–5.829 GHz
平均增益	2dBi
辐射效率	⩾97%
驻波比	⩽1.3
交叉极化抑制	–15to–30dB
连接器	RP – SMAx2
外形尺寸	25*15.5mm
重量	4.3g

CADDXFPV 技术支持
email: support@caddxfpv.com