Eclipse 009HD

Quick Start Guide

V1.0

Product Introduction

Eclipse 009HD offers two HD versions, Avatar GT and Ascent GT Pro, to meet different user needs.

- With Pixelpump-Gen3 technology, the image quality is clearer and heat sources are more prominent.
- Supports customer-defined OSD character display.
- Supports UVC video output.

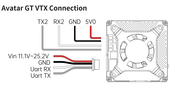
The third-generation Pixelpump-Gen3 technology.

Equipped with the third-generation Pixelpump-Gen3 technology, the Eclipse 009HD delivers a significant advantage in image clarity when paired with an HD transmission system, offering richer and more detailed visuals.

Imaging powered by Pixelpump-Gen3 technology

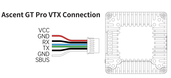
Product Introduction

Avatar GT VTX Connection



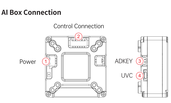
- Power consumption: 12V@1.5A.
- Please consider the power supply capability of the power supply. VTX generates a lot of heat when working, so please pay attention to airflow for heat dissipation.

Ascent GT Pro VTX Connection



- Power consumption: 12V@1.5A.
- Please consider the power supply capability of the power supply. VTX generates a lot of heat when working, so please pay attention to airflow for heat dissipation.

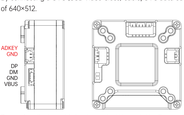
AI Box Connection



- Power Consumption: 12V@120mAh

UVC Function

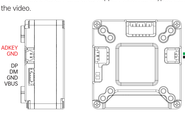
By connecting a UVC (USB Video Class) cable, UVC data output is supported in MJPEG format with a resolution of 640×512.



Dynamic adjustment is implemented through the Processing Unit (PU) control defined by the UVC protocol, where the brightness adjustment interface is UVC_PU_BRIGHTNESS_CONTROL, the contrast adjustment interface is UVC_PU_CONTRAST_CONTROL, and the pseudo-color adjustment interface is UVC_PU_HUE_CONTROL.

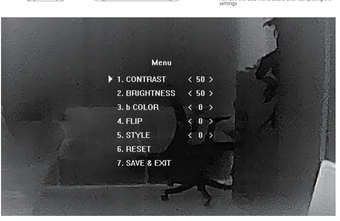
ADKEY Function

The camera's ADKEY and GND support external keypad connection for customizing OSD strings displayed on the video.



OSDMenu Board

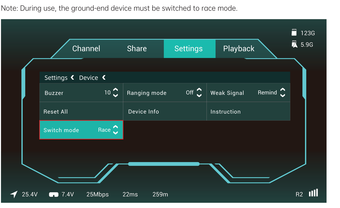
*Short press the middle button on the menu board to enter OSD settings. Remove the OSD menu board after completing the settings.



The menu board provides an intuitive operation experience through the ADKEY interface: short press to enter the menu, use the up and down keys to select functions, and the left and right keys to adjust parameter values. Adjustable parameters include contrast, brightness, pseudo color, image rotation, image style, and other display settings.

Switch Control

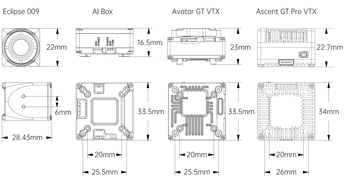
Note: During use, the ground-end device must be switched to race mode.



Operating Instructions:
1. Ground-end device press the menu key, select the settings option
2. In the settings, select the device to enter the option to find the switching mode, select the racing mode to save it

Note: This operation is currently required only for the Avatar HD VTX series; the Ascent HD VTX series does not require it.

Dimension



Specifications

Model	Eclipse 009HD
Frame Rate	50Hz
Resolution	960*768 (Pixelpump)
Video Interface	Avatar/Ascent VTX system + UVC (simultaneous output)
Supply Voltage	4.5V~20V
Typical Power Consumption	<1.5W
Focal Length	9.1mm
F.NO	F1.0
FOV	48.3°(H)*38.6°(V)
Communication Interface	UVC/ ADKEY
Brightness/Contrast	0-100 Optional
Palette	0-4 Optional
Digital Zoom	1.0~4.0× stepless zoom (controllable via UVC)
Image Mirroring	Horizontal / Vertical / Diagonal
Operating Temperature	-20℃~50℃
Dimensions	Camera：22*22*28.45mm AI Box：33.5*33.5*16.5mm

Model	Avatar GT VTX
Communication Frequency	5.725-5.850GHz
Transmitter Power (EIRP)	FCC: <30dBm, MAX:33dBm; CE: <14dBm; SRRC: <20dBm; MIC: <25dBm
Recording	1080p/720p
Channels	8
Wide Power Input	11.1~25.2V
OSD	Canvas mode
Latency	Average delay 22ms
Antenna	2(IPEX)
Dimensions	33.5*33.5*23mm

Model	Ascent GT Pro VTX
Communication Frequency	5.650-5.924 GHz
Transmitter Power (EIRP)	5.8 GHz: FCC<30dBm; CE<14dBm; SRRC<20dBm; Mic<25dBm
Image Quality	1080P 60FPS
Channels	8
Wide Power Input	11.1~25.2V
OSD	Canvas mode
Latency	Average delay 35ms
Antenna	2(MMCX)
Dimensions	34*34*22.7mm

Eclipse 009HD

使用说明

V1.0

■ 产品简介

Eclipse 009HD 提供两种高清版本 Avatar GT 和 Ascent GT Pro 以满足用户不同需求。

- 使用 Pixelpump-Gen3 技术，画质更加清晰，热源更加凸显
- 支持客户自定义OSD 字符显示
- 支持UVC图像输出

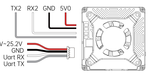
第三代Pixelpump-Gen3技术

Eclipse 009HD搭载第三代Pixelpump-Gen3技术，配合高清图传，清晰度方面具有显著优势，且细节呈现更为丰富。

采用 Pixelpump-Gen3 技术的成像画面

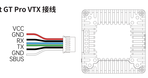
■ 接线与定义

Avatar GT VTX 接线



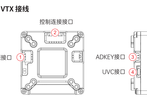
⚠ • 功耗参考: 12V@1.5A，接线时请考虑电源供电能力
• 产品工作时发热量大，请注意气流散热

Ascent GT Pro VTX 接线



⚠ • 功耗参考: 12V@1.5A，接线时请考虑电源供电能力
• 产品工作时发热量大，请注意气流散热

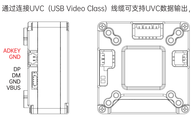
AI Box VTX 接线



⚠ • 功耗参考: 12V@120mAh

■ UVC功能

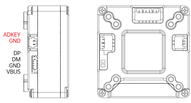
通过连接UVC（USB Video Class）线缆可支持UVC数据输出，格式为MJPEG，分辨率为640×512。



通过UVC协议定义的 **Processing Unit (PU)** 控制单元实现动态调节，其中亮度的调节接口为 **UVC_PU_BRIGHTNESS_CONTROL**，对比度的调节接口为 **UVC_PU_CONTRAST_CONTROL**，伪彩色的调节接口为**UVC_PU_HUE_CONTROL**。

■ ADKEY功能

相机的ADKEY 和 GND 支持通过外接按键板自定义视频显示的OSD字符串。



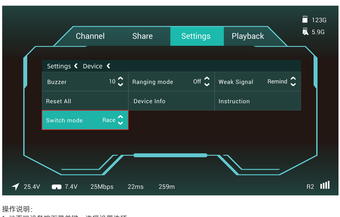
OSD菜单版

*短按菜单版中键进入OSD设置
设置完成后移除OSD菜单版

菜单板通过ADKEY接口提供直观的操作体验：短按进入菜单，上下键选择功能项，左右键调整参数值。可调节参数包括对比度、亮度、伪彩色、画面旋转及画质风格等多项显示设置。

■ 切换模式

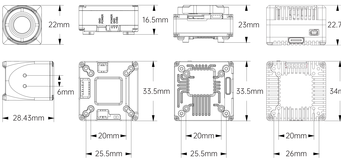
注意：在使用时，需要将地面端设备模式切换为竞速模式。



操作说明：
1. 地面端设备按下菜单键，选择设置选项
2. 在设置中，选择设备进入选项找到切换模式，选择竞速模式保存即可

注意：目前仅Avator HD图传系列需要此操作，Ascent HD图传系列无需操作。

■ 尺寸



■ 产品规格

型号	Eclipse 009HD
输出帧频	50Hz
分辨率	960*768（Pixelpump）
视频接口	Avatar/Ascent 图传系统+UVC（同时输出）
供电范围	4.5V~20V
功耗	<1.5W
焦距	9.1mm
光圈	F1.0
视场角	48.3°(H)*38.6°(V)
调节方式	UVC/ ADKEY
亮度/对比度	0-100可选
色板	0-4 可选
数字变倍	1.0-4.0 无级变倍（UVC可控制）
图像镜像	水平/垂直/斜角
工作温度	-20℃~50℃
尺寸	Camera：22*22*28.43mm AI Box：33.5*33.5*16.5mm

型号	Avatar GT VTX
通信频率	5.725-5.850GHz
发射机功率（EIRP）	FCC: <30dBm, MAX:33dBm; CE: <14dBm; SRRC: <20dBm; MIC: <25dBm
录制	1080p/720p
通道	8
宽电源输入	11.1~25.2V
OSD	画布模式
延迟	平均延迟 22 毫秒
天线	2(IPEX)
尺寸	33.5*33.5*25mm

型号	Ascent GT Pro VTX
通信频率	5.650-5.924 GHz
发射机功率（EIRP）	5.8 GHz: FCC<30dBm; CE<14dBm; SRRC<20dBm; Mic<25dBm
实时图像质量	1080P 60FPS
频点数量	3
宽电源输入	11.1~25.2V
OSD	画布模式
延迟	平均延迟 35 毫秒
天线	2(MMCX)
尺寸	34*34*22.7mm