Eclipse 009SL

Quick Start Guide

V1.0

Product Introduction

- Using Pixelpump technology, the image quality is clearer and heat sources are more prominent.
- Supports Analog PAL interface output.
- Supports customer configuration via the menu board
- Supports UVC image output.

Third-generation Pixelpump Technology

The Eclipse 009SL is equipped with Pixelpump technology, delivering a remarkable boost in image resolution to capture every detail with stunning sharpness and unparalleled visual quality. Its advanced image processing system significantly enhances long-distance observation, ensuring you can see farther and clearer even in challenging environments. In addition, Pixelpump-Gen3 intelligently eliminates minor motion blur caused by drone vibrations, guaranteeing smooth and stable HD footage even during high-speed flights or when the aircraft is unsteady.

Figure 1: Image captured without Pixelpump-Gen3 technology

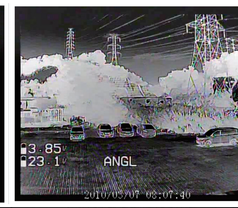
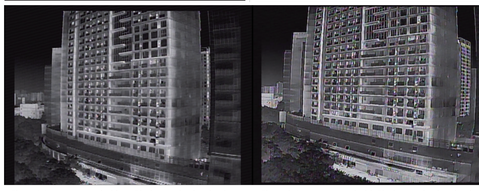
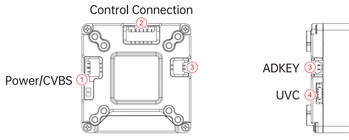


Figure 2: Image captured with Pixelpump-Gen3 technology

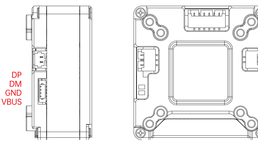


Interface Definition



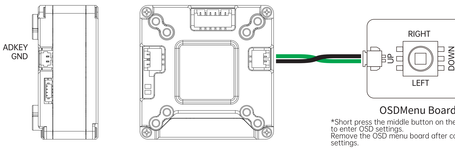
UVC Function

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 unit defined by the UVC protocol. The adjustment interfaces are as follows: UVC_PU_BRIGHTNESS_CONTROL for brightness, UVC_PU_CONTRAST_CONTROL for contrast, UVC_PU_HUE_CONTROL for pseudo color, UVC_CT_ROLL_ABSOLUTE_CONTROL for image mirroring, and UVC_CT_ZOOM_ABSOLUTE_CONTROL for image zooming.

Menu Board Functions



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 user experience via the ADKEY interface: a short press enters the menu, the up/down keys select functions, and the left/right keys adjust parameter values. Adjustable parameters include contrast, brightness, pseudo color, image rotation, and image style, among other display settings.

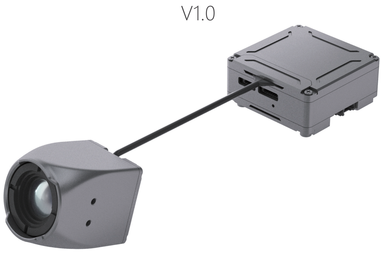
Specifications

Model	Eclipse 009SL
Resolution	960*768 (Pixelpump)
Frame Rate	50Hz
Video Interface	PAL + UVC (simultaneous analog and digital 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)
Adjustment Method	UVC/ ADKEY
Luminance / Contrast	0-100 (optional)
Color Palette	0-4 (optional)
Digital Zoom	1.0–4.0× Stepless Zoom (controllable via UVC)
Image Flip	Horizontal / Vertical / Diagonal
Operating Temperature	-20℃~50℃
Dimensions	Camera: 22*22*28.43mm
	Box: 33.5*33.5*16.5mm

Eclipse 009SL

使用说明

V1.0

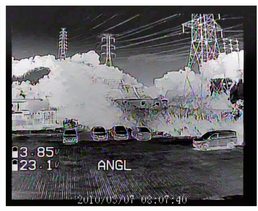


■ 产品简介

- 使用 Pixelpump 技术，画质更加清晰，热源更加凸显
- 支持模拟PAL接口输出
- 支持客户使用菜单板进行配置
- 支持UVC图像输出

Pixelpump 技术

Eclipse 009SL 搭载 Pixelpump 技术，显著提升图像分辨率，以惊人的锐度捕捉每一处细节，呈现无与伦比的画质表现。其先进的影像处理系统大幅优化远距离观测能力，即使在复杂环境下，也能让您看得更远、更清晰。此外，Pixelpump-Gen3 还能智能消除无人机抖动导致的轻微动态模糊，确保高速飞行或机身不稳时仍能获取流畅稳定的高清画面。



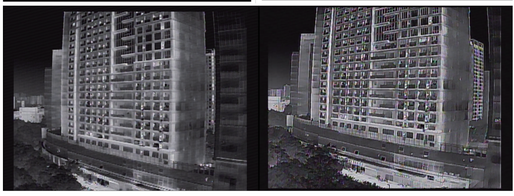
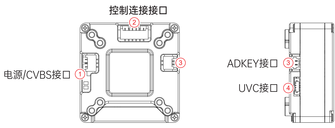


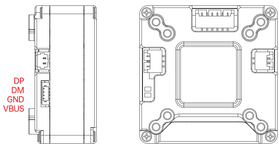
图1 未采用 Pixelpump-Gen3 技术的成像画面　　图2 采用 Pixelpump-Gen3 技术的成像画面

■ 接口定义



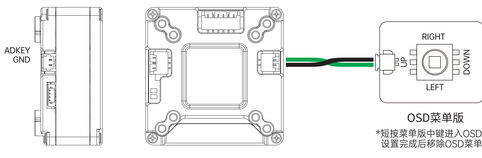
■ UVC功能

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**，图像镜像功能接口为**UVC_CT_ROLL_ABSOLUTE_CONTROL**，图像缩放功能接口为**UVC_CT_ZOOM_ABSOLUTE_CONTROL**。

■ 菜单板功能



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。

■ 产品规格

型号	Eclipse 009SL
分辨率	960*768（Pixelpump）
输出帧频	50Hz
视频接口	PAL+UVC（模拟数字可同时输出）
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	相机端：22*22*28.43mm 处理器端：33.5*33.5*16.5mm