

UVC-01S

Ultra-Low-Latency USB 3 UVC Camera

User Manual

INTRODUCTION

UVC-01S is a compact USB-C UVC camera designed for ultra-low latency in unmanned and real-time control applications. It minimizes camera-side delay from CMOS capture to USB output by using an FPGA-based video pipeline and uncompressed USB 3.0 isochronous streaming, avoiding encoder and multi-frame buffering latency. UVC-01S is fully compliant with the standard UVC protocol and remains plug-and-play across mainstream operating systems. By reducing latency at the source, it helps lower overall glass-to-glass delay across different host platforms, enabling faster operator response and improved system performance, while still allowing users to further optimize latency on the host side if needed.

FEATURES

- Ultra-low latency architecture: FPGA video pipeline minimizes internal processing delay to approximately one frame.
- Uncompressed USB 3.0 isochronous audio and video streaming: avoids encoding and buffering latency.
- Firmware update support.
- Compact USB-C camera design.
- Uncompressed YUY2 output: Up to 1920×1080 at 105 fps.
- Sony IMX675 2K 1/2.8-inch CMOS image sensor.
- 4× digital zoom.
- UVC plug-and-play.
- Wide field of view: 135° diagonal and 113° horizontal.

SPECIFICATIONS

Model Name	UVC-01S
Technical	
Role of usage	Super low latency USB camera
Resolution and Frame Rate	1080p at up to 105 fps
Sensor Type	IMX-675 1/2.8"-Type CMOS Sensor
Supported Sensor Resolution	5 MP
Field of View	Diagonal: 135° Horizontal: 113° Vertical: 60°
Zoom	4x (Digital)
Host Connection	USB Type-C USB 3.0 only
Focus Type	Fixed
Power Source	Bus Powered
Low-Light Correction	Yes
OS Compatibility	Windows macOS Linux Chrome OS
Microphone	48KHz Mono
Mechanical	
Housing	Metal enclosure
Power supply	5V DC
Power consumption	<10 Watts
Operation temperature	0~40°C [32~104°F]
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]