



SV5C10 COLOR CAMERA – SV5M10 MONOCHROME CAMERA 5 MEGAPIXEL CAPTURE AT 10 FPS WITH EXCEPTIONAL IMAGE QUALITY



*Lens optional.

The **SILICON VIDEO® 5C10** (color) and **5M10** (monochrome) camera systems offer 5 megapixel progressive scan capture, low noise digital signaling, small size, flexible interface cable, convenient software control, the availability of extensive processing, measurement and analysis capabilities, and low cost. XCAP software provides control of all camera operations.

SENSOR BY MICRON – These camera systems are based on the MT9P031 sensor from Micron. The MT9P031 progressive scan

sensor offers both an Electronic Rolling Shutter for maximum frame rates, and a Global Reset Release Shutter for improved sharpness. Other features include windowing, column and row skip modes, snapshot mode, 12 bit dynamic range, and an active programmable array resolution of 2592H x 1944V pixels.

ASYNCHRONOUS CAPTURE with STROBE OUTPUT – The SV5C10 and SV5M10 cameras offer Asynchronous Capture: the recording of an image (or images) in response to a trigger signal. The camera provides a strobe output signal to synchronize an electronic flash (strobe) for bright, uniform, short duration illumination. These cameras can be triggered to capture an image (or images) as might be required in product inspection, laser beam profiling, medical imaging, or any application that requires image capture at a specific time (there is a delay of one frame time between trigger and start of capture). The use of strobe illumination allows minimum exposure time with maximum image sharpness.

ONLY ONE CABLE – A single cable connects the camera head to the PIXCI SI board. The PIXCI SI board provides power to the camera, sends and receives camera control signals, generates the programmable pixel clock, and receives video data. No dedicated power supply or power cable required. Multiple cabling options are available, see the SILICON® VIDEO Cable page for more details.

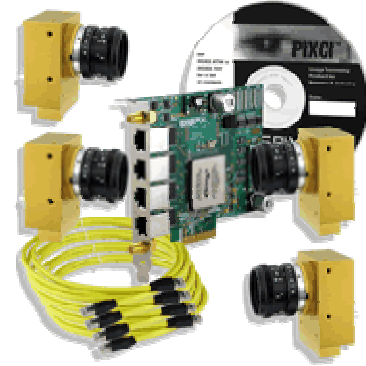
CAPTURE & ADJUST DIALOG – The XCAP Imaging Application provides a Capture & Adjust Dialog for selecting pixel clock frequency, integration/exposure time, capture resolution, gain, offset, trigger control, and more. The SV5C10 color camera dialog provides automatic white balance as well as manual adjustment of Red, Green, and Blue gain

The **SILICON VIDEO 5C10 / 5M10** camera systems include:

- 5 Megapixel Camera Head (color or monochrome)
- Infrared Cut Filter (color camera only)
- Shielded Interface Cable (various lengths)
- PIXCI SI PCI Frame Grabber
- XCAP-Lite Imaging Program (XCAP-Ltd or Std Optional)

- **2592 x 1944 @ 10 fps**
- **1280 x 1024 @ 30 fps**
- **640 x 480 @ 89 fps**
- **8 or 12 bits per pixel**
- **Compact Camera Head**
- **Infrared Cut Filter (5C10)**
- **XCAP-Lite Imaging Program**
- **Camera Integration and Reset Control**
- **Sequence Capture**
- **Sequence Save (XCAP-Ltd or Std)**
- **Triggered Sequence Capture**
- **Windows & Linux, 32 & 64-bit**
- **RoHS Compliant**

PIXCI® SI4 – A single PCI Express x4 board supporting up to four SILICON VIDEO® cameras is also available. The cameras may be the same or a mix and can operate simultaneously or independently. The PIXCI® SI4 can have four cameras expose simultaneously from one trigger or can use four trigger inputs – one for each camera.



To complete a SILICON VIDEO® 5C10 system add a 1/2" format C-Mount lens, analysis software, lighting, and computer – all available from EPIX, Inc., or your (authorized) distributor of EPIX® imaging products.

CAPTURE & ADJUST DIALOGS

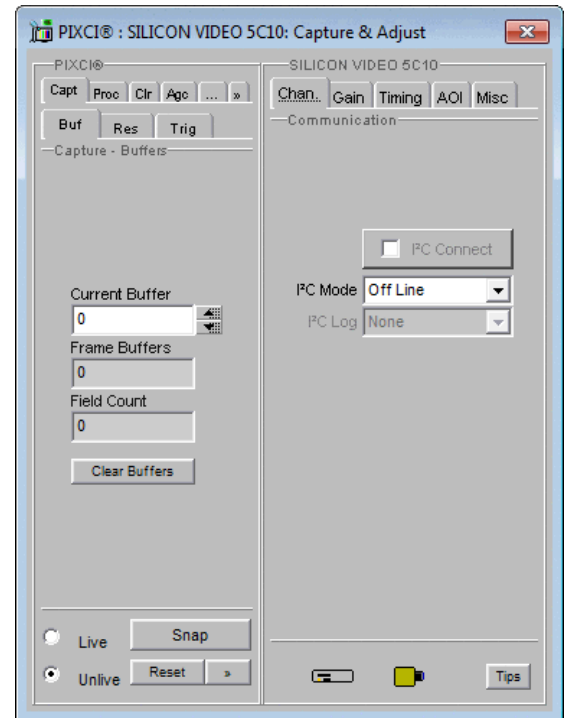
The XCAP Imaging Program simplifies camera operation with a dedicated Capture & Adjust Dialog. The Capture & Adjust Dialog provides one convenient location for camera controls such as exposure, resolution, triggering, color balance and frame rate. In addition, the SV5C10 Dialog provides a camera-to-computer communication indicator, a programmable pixel clock, and exposure synchronized to AC power frequencies.

The Color & White Balance menu offers simple color balance settings for common sunlight, fluorescent light, and incandescent light conditions. In addition, for greater color precision, or for unusual light sources, XCAP offers advanced options for building custom color settings.

The camera's pixel clock frequency is user-selectable over a range of 25 MHz to 70 MHz. The programmable pixel clock provides a wider range of frame rates and exposure times.

The intensity of AC lighting fluctuates with the phase of the AC voltage that powers it. Capturing sequences of images using arbitrary frame rates with AC lighting will result in images with differing brightness. The SV5C10 Capture & Adjust Dialog offers a convenient fix for this problem – exposure times can be easily set to multiples of the local AC line frequency, either 1/50th or 1/60th second. Synchronizing exposure times to the line voltage provides images with consistent illumination from a varying-intensity AC light source.

The presence or absence of the 2 lines between the camera and computer icons indicate whether or not the computer and camera are properly connected and capable of communicating.



VIDEO-TO-DISK CAPTURE

The optional XCAP-Std imaging program enables video-to-disk capture, potentially for several hours. Requires a host computer with two 7200 rpm hard drives configured as RAID 0. EPIX® offers complete imaging systems, designed to your specifications, guaranteed to capture uncompressed video to disk without dropping frames.



RUGGEDIZED ENCLOSURE

The Type-MX VideoModule ruggedized enclosure system from Tectivity, Inc. is available for SILICON® VIDEO cameras.

SPECIFICATIONS

Format : Bayer Pattern Color (SV5C10)

Monochrome (SV5M10)

Pixel clock range : 25 MHz – 70 MHz

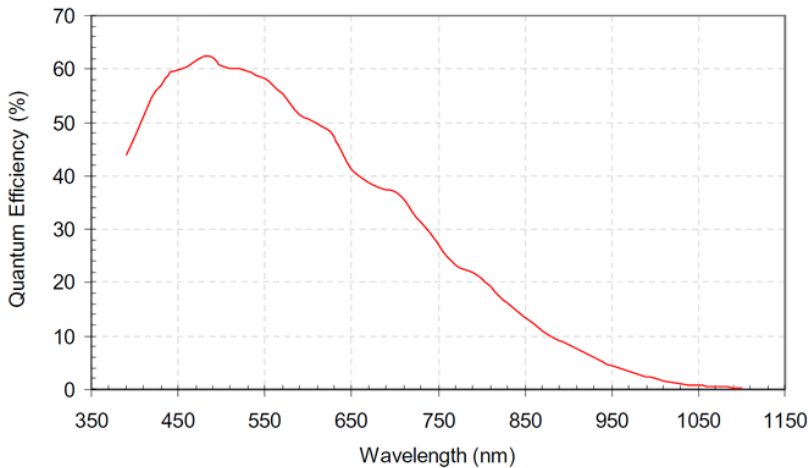
Frame resolution : 2592 (H) x 1944 (V) maximum
4 (H) x 4 (V) minimum

Exposure Time:

50 µsec Minimum @ 70 MHz

9.15 sec Maximum @ 25 MHz

Monochrome Quantum Efficiency



CAMERA HEAD:

Dimensions:

1.91" H x 1.51" W x 0.82" D

48.5mm H x 38.4mm W x 20.8mm D

Weight:

73 Grams (2.6 Ounces)

Tripod Mount Positions:

Any 1 of the 4 sides: 1/4"-20 thread

Lens:

1/2" optical format C-mount

PIXCI SI Board Dimensions:

12.7 cm (L) x 7.4 cm (H)

5.0" (L) x 2.875" (H) [short slot]

INTERFACE CABLE:

Shielded CAT-5 with RJ45 plugs.

BUS REQUIREMENTS:

3.3 or 5 volt PCI slot.

FRAME RATE EXAMPLES

Free-Run 8-Bit Mode w. ERS

Frame Resolution	Pixel Clock Frequency		
	25 MHz	48 MHz	70 MHz
2592 x 1944	3.7 fps	7.0 fps	10.2 fps
2048 x 1536	5.5 fps	10.5 fps	15.4 fps
1920 x 1080	8.1 fps	15.6 fps	22.8 fps
1440 x 1080	9.8 fps	18.8 fps	27.5 fps
1280 x 1024	11.1 fps	21.3 fps	31.1 fps
1280 x 720	15.7 fps	30.2 fps	44.1 fps
800 x 600	24.2 fps	46.4 fps	67.6 fps
640 x 480	33.2 fps	63.7 fps	93.0 fps
320 x 240	82.3 fps	158.0 fps	230.4 fps
146 x 110	201.2 fps	386.4 fps	563.4 fps
128 x 128	177.5 fps	340.8 fps	497.0 fps
64 x 64	335.0 fps	682.0 fps	994.0 fps

MICRON CMOS MT9P031 Sensor

Resolution:

2592H x 1944V

Pixel Size:

2.2µm x 2.2µm

Sensor Size:

5.70mm(H) x 4.28mm(V) (4:3)

Responsivity:

1.4 V/lux-sec (550nm)

Shutter Types:

Global Reset Release (GRR)

Electronic Rolling Shutter (ERS)

EPIX SOFTWARE Support -

Supported by XCAP-Lite (no charge with camera purchase), XCAP-Ltd, XCAP-Std, XCLIB, and XCLIBIPL.

Compatible with WIN Vista, XP, 2K, NT, ME, 98, 95; DOS and LINUX.

ADDITIONAL CABLE OPTIONS



No Cable: Note tab is at the bottom and conductors are at the top of the connector.



Straight cable exit: CBL-SI-SSH-xxM



Cable exit over conductors: CBL-SI-SSH-RAC-xxM



Cable exit over tab: CBL-SI-SSH-RAT-xxM

Ruggedized Enclosure

The Type-MX VideoModule ruggedized enclosure system from Tectivity, Inc. is available for SILICON® VIDEO cameras and provides these benefits:

- Sealed Enclosure - keeps out particulates, liquids, spray, vapors - tamper-proofs vision equipment.
- Compact Size - maximizes access to the manufacturing process.
- Raised Optical Window - sheds debris, easy to clean - treated glass resists scuffing.
- Sealed Access Cover - facilitates camera setup without disturbing installation.
- Ruggedized Construction - for superior mechanical protection.
- Industrialized Electrical Connectors - quick connects for power, video out, camera controls, lighting, etc. - else, grommeted cabling options.
- Plug-and-Play - four mounting screws and electrical connector(s) - and presto, a new unit is installed.
- Installation Flexibility - in any position depending on camera orientation limitations.
- Integrated Illuminators - and electronic controls for enhanced imaging options -- and more features.

