

sinaSCOPE

Digital 3D Microscopy Systems

Use Case

sinaSCOPE is a digital 3D microscopy platform from Solectrix. A complete sinaSCOPE system consists of a microscope equipped with two digital 4K cameras, a 3D display and an image processing unit. It provides a live 3D image without the need for 3D glasses. For users with existing microscopes, sinaSCOPE digital upgrade kits enable all optical, eyepiece-based stereo microscopes to be expanded to a digital microscope with two 4K cameras and a 3D monitor.



- + 3D live image without glasses
- + Razor-sharp 4K UHD resolution
- + Object remains freely accessible
- + Object and 3D display in direct view

Model: sinaSCOPE Dental / Inspect



Use Case

For use in, e.g., dental labs, optical inspection



System Key Aspects

Camera & Display Resolution	4K UHD (3840 × 2160 pixels)
Frame Rate	60 fps
Latency (Camera to Display)	100 ms typ.
Zoom	6× to 30×

System Components

Image Processing Electronics	sinaSCOPE Control Compact Mini PC with Solectrix proFRAME PCIe board
Camera Heads	Solectrix SXC5 twin camera heads
Display	Solectrix SXD2 autostereoscopic 15.6" 4K display (sinaSCOPE Dental with protective coating)
Software	SX Camera ISP, SX 3D Analyzer, SX Monitor License
Included Accessories	Microscope stand with LED ring light Monitor stand HDMI cable, USB cables 3Dconnexion SpaceMouse

Model: sinaSCOPE Upgrade



Use Case

Digital upgrade kit for stereo microscopes



System Key Aspects

Camera & Display Resolution	4K UHD (3840 × 2160 pixels)
Frame Rate	60 fps
Latency (Camera to Display)	65 ms typ.

System Components

Image Processing Electronics	sinaSCOPE Control PC Desktop PC with Solectrix proFRAME PCIe board
Camera Heads	2× Solectrix SXC4 miniature 4K camera head
Display	Solectrix SXD2 autostereoscopic 15.6" 4K display Support for two displays simultaneously
Software	SX Camera ISP, SX 3D Analyzer, SX Monitor License
Included Accessories	2× FAKRA camera cable (1.5 meters) HDMI cable, USB cables 3Dconnexion SpaceMouse

Model: sinaSCOPE OEM



Use Case

Upgrade for stereo microscopes
Integration kit for existing ISP systems

The Alternative: Assemble Your Own sinaSCOPE PC!

If you prefer to use a custom PC system, you can! We offer a complete integration kit with the required software, the sinaSCOPE 4K miniature camera heads, a proFRAME PCIe grabber card and our SXD2 autostereoscopic 15.6" 4K display.

System Components

Capturing Module	Solectrix proFRAME PCIe board
Camera Heads	2× Solectrix SXC4 miniature 4K camera head
Display	Solectrix SXD2 autostereoscopic 15.6" 4K display
Software	SX Camera ISP SX 3D Analyzer SX Monitor License
Included Accessories	2× FAKRA camera cable (1.5 meters)

System Recommendations

CPU	AMD Ryzen™ 7 5700X CPU or better recommended
GPU	NVIDIA® GeForce RTX™ 3050 GPU or better recommended
Memory	16 GB DDR4 RAM recommended

Components: Display

Solectrix SXD2 Autostereoscopic 15.6" 4K Display	
Operation	Glasses-free single-user operation
Refresh Rate	60 Hz
Resolution	4K UHD (3840×2160)
Aspect Ratio	16:9
Size	15.6" (39.62 cm)
Brightness	500 cd / m ²
Color	100% Adobe RGB
Optimal Viewing Distance	450 mm ~ 800 mm
Optimal Viewing Angle	± 35°
Eye Tracking Speed	90 fps
Eye-Tracking Camera	Intel RealSense D435
Display Rated Input Power	PD 25W
Interfaces	2× USB 3.0, 2× HDMI 2.0
Weight	1.4 kg
Dimensions	354.2 × 252.5 × 30.2 mm (w × h × d)
Installation	Vesa Mount 100 × 100 mm, M4, depth 6 mm
Connection	via HDMI 2.1, USB 2.0 (Eye Tracker), DisplayPort 1.4a or USB-C PSU (Power)



Components: Camera Heads

Solectrix SXC4 Miniature 4K Camera Heads

Sensor	Sony IMX678, rolling shutter, diagonal 9 mm (type 1/1.8")
Resolution	4K UHD (3840×2160)
Framerate	60 fps
Color Depth	10 bit
Electrical Interface	GMSL2/3
Dimensions	3.0 × 4.4 × 4.4 cm (w × h × d)
Weight	70 g
Lens Mount	C/CS-mount + adapters where needed
Stand Mount	1/4-20 UNC thread



Solectrix SXC5 Twin Camera Heads

Sensor	Sony IMX678, rolling shutter, diagonal 9 mm (type 1/1.8")
Resolution	4K UHD (3840×2160)
Framerate	60 fps
Color Depth	10 bit
Electrical Interface	GMSL2/3
Dimensions	6.2 × 9.1 × 7.5 cm (w × h × d)
Weight	440 g (705 g with default lenses)
Lens Mount	C/CS-mount + adapters where needed
Stand Mount	76 mm microscope head



Components: Capturing Module, Opt. Accessories & Services

Solectrix proFRAME Capturing Module

Type	PCIe Grabber Card
Connection	via PCIe x8 Gen3 interface
Dimensions	175.26 mm × 106.68 mm Full height, half length PCIe board

proFRAME, a product of Solectrix, is a frame grabber system for capturing and replaying of raw video data streams. It is used in all sinaSCOPE models. Visit www.solectrix.de/proframe



3Dconnexion SpaceMouse

3D mouse for easy operation



Monitor Stand

PureMounts PM-OFFICE-ST-10 – Flexible monitor stand for the 3D display



Monitor Arm

StarTech.com ARMPIVOTE2 – Flexible monitor holder for the 3D display



Microscope Camera Adapter

For microscopes without C/CS-mount, the required model depends on eyepiece size. The adapter must match your microscope's eyepiece format and be suited for a 1/1.8" sensor (8.86 mm diagonal). Solectrix support can assist in the adapter selection.



Camera Cables

Customized FAKRA camera cable (5 or 10 meters)

Optional Services

Integration support – let our experts help you assemble your customized sinaSCOPE processing unit!

Components: Software

Windows 10 and later is supported. Linux support is coming soon.

SX Camera ISP

Adjust sharpness, exposure, contrast, brightness, saturation, and white balance

Up to 5× digital zoom

SX 3D Analyzer

Live 3D image analysis

Automatic rectification for stereoscopic displays

SX Monitor License

Supports Solectrix SXD2 autostereoscopic displays

Supports standard stereoscopic displays with glasses

Support for other displays can be realized on request

3D Image Capturing / Viewing

Capture 3D images in JPEG Stereoscopic format

View 3D images

Developed by Solectrix GmbH

Since 2005, Solectrix has been successful as a reliable and innovative partner in image processing at the highest level. Based in the Nuremberg/Fürth/Erlangen area, the design house for embedded systems with its over 150 employees became known for its significant contribution to the ARRI ALEXA, the most popular digital camera for big Hollywood productions, and its own 3D camera system sinaCAM, which was used in numerous TV productions and commercials to achieve unique 3D image quality.

solectrix GmbH

Dieter-Streng-Str. 4
90766 Fürth
Germany

+49 (0) 911-30 91 61-0
info@solectrix.de
www.solectrix.de