

All Digital

Time Domain Imaging™

M249 SXGA MICRODISPLAY

High Fidelity Imager / Spatial Light Modulator

FEATURES

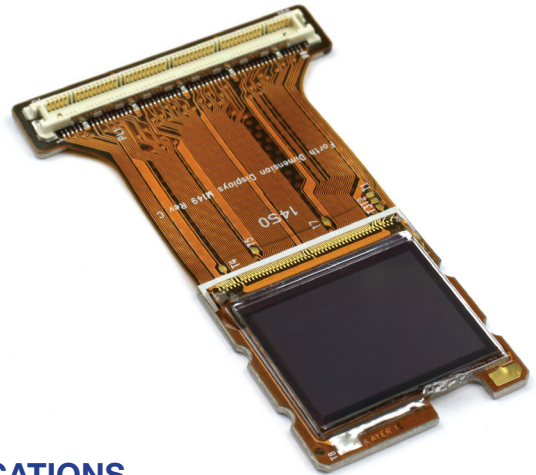
- Fully digital, fast binary FLC microdisplay
- 1280 x 1024 pixels
- 32 pixel border
- 13.62µm pixel pitch, square pixels
- >96% fill factor
- 40µs liquid crystal switching time
- Up to 85 Hz frame-rate at 24-bit colour
- Up to 3.2 kHz binary frame-rate
- Up to 240 Hz frame-rate at 8-bit greyscale
- Different display addressing sequences available
- Proven technology, long term availability

The SXGA microdisplay is a digitally controlled reflective ferroelectric liquid crystal on silicon (FLCOS) spatial light modulator (SLM) suitable for imaging and other light modulation applications. When coupled to one of ForthDD's microdisplay interface products and an appropriate optical system, the SXGA microdisplay can be used to control either the amplitude or phase of light incident upon it.

The microdisplay is an electro-optical device that takes a 2D 1-bit binary array as its input and maps it to its corresponding pixel array. Each pixel can be 'on' or 'off' according to the value of the corresponding input bit. With appropriate optics and using Time Domain Imaging™ techniques, a diverse range of applications can be served.



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APPLICATIONS

- Monocular/binocular (stereoscopic) viewers
- Bi-ocular viewers
- Head mounted displays (HMD)
- Head-up displays (HUD)
- Helmet mounted visual systems (HMVS)
- Image injection for surgical microscopes
- Ophthalmic metrology
- 3D optical metrology
- Structured light projection
- Automated optical inspection (AOI)
- Confocal microscopy
- Optical correlation

High fill-factor (small inter-pixel gap, no sub-pixels), customisable colour gamut, no image burn-in of static content and fast refresh make the SXGA particularly suitable for applications requiring high fidelity image reproduction such as virtual imagers for training & simulation applications, video monitoring, and medical image injection.

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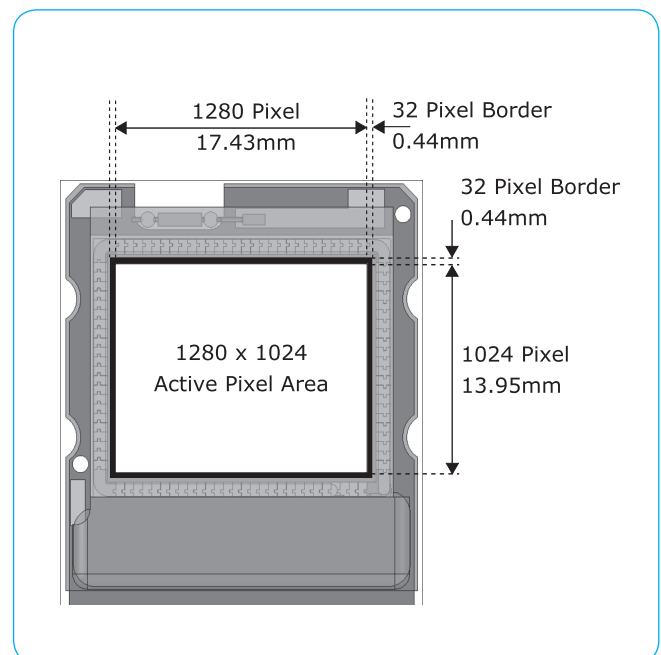
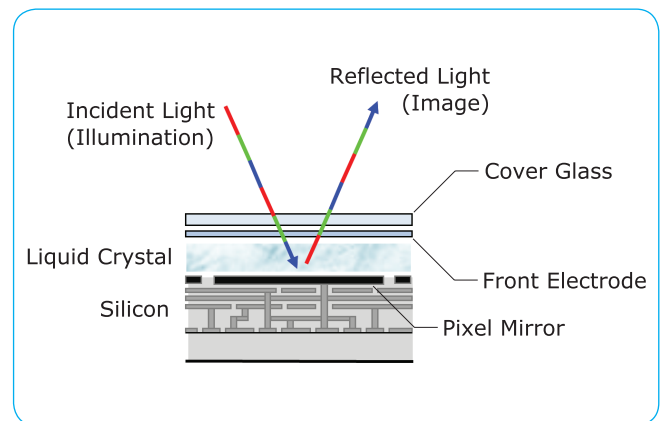
A choice of video or flash memory based interface platforms support applications ranging from structured light projection for automated optical inspection (AOI) to ophthalmic diagnostic equipment. The microdisplay's ability to function at large angles of incidence makes it an ideal choice for projection systems where off-axis projection is required in order to meet the Scheimpflug condition.

The SXGA microdisplay has been in production for over 10 years serving many applications across the training & simulation, medical, industrial, military and cinematography sectors. Forth Dimension Displays has a long term supply policy for this product making it an ideal choice for products demanding long term support.

SPECIFICATIONS

Resolution	1280 x 1024	
Device Diagonal	0.88"	
LC Material	Ferroelectric	
Fill Factor	>96%	
Pixel Pitch	13.62µm	
Wavelength Range	430nm-700nm	
Reflectance	60%	1
Contrast Ratio	>1000:1	2
Operating Temperature	0 °C to + 50 °C	
Weight	10g	

1. Photopic reflectance - this value includes polarization conversion efficiency, transmission/reflection, absorption and fill factor losses but does not include initial light polarization or duty cycle.
2. This is a system parameter dependent upon f/# of illumination, choice of polarizing components and inter display-illumination alignment.



Ordering Code

SXGA Microdisplay

M0787-00249

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