

All Digital

Time Domain Imaging™

SXGA-R12

For fast bit-plane sequencing applications

Forth Dimension Displays offers the SXGA-R12 spatial light modulator (SLM) solution based on Ferroelectric Liquid Crystal On Silicon (FLCOS) technology specifically designed to meet the demands of optical metrology system builders.

The SXGA-R12 is a fast switching, all digital, high performance reflective SLM featuring Forth Dimension Displays' industry proven SXGA (1280 x 1024) Time Domain Imaging™ technology with the R12 application specific interface and an optional 4.7 A LED driver.

The interface allows the system builder to precisely time their images on the device under test. Bi-directional trigger signals (either to the interface or from it) ensure accurate synchronization with other system components such as cameras, translation tables or other R12 boards. With storage for 768 full resolution 1-bit images, the interface allows offline set up for online optimization with no controlling PC required.

The SLM offers digitally precise images in a high fill factor FLCOS package ideally suited for off-axis projector applications in the 3D metrology market. The optional LED driver (M137, top board in image) allows high brightness, small form factor projectors with linear greyscale response to be realised for matching to cameras with short exposure times.

BENEFITS

- High resolution, SXGA (1280 x 1024 pixel)
- 40 μs LC switching enables the rapid rendering of complex patterns
- > 96% fill factor: accurate image projection with no visible structure
- All digital grey scale - linear response Time Domain Imaging™
- Powerful GUI and API
- Reduced design-in time with optional LED driver

FEATURES

- Small form factor
- Flexible synchronization (including inter-unit synchronisation)
- Non-volatile storage for 768 bit-planes and associated sequences
- One system can perform multiple measurements
- Optional 4.7 A LED driver board
- Direct drive with optional 50 mm flex extender
- Variable display addressing sequences
- RS-232 / RS-85 / USB interface for system control



SXGA-R12 with SXGA (M549) microdisplay

APPLICATIONS

- High resolution structured illumination
- Coded aperture compressive temporal imaging
- 3D AOI and SPI systems
- Super resolution microscopy
- 3D optical profiling
- Structured light projection
- Inline 3D component inspection



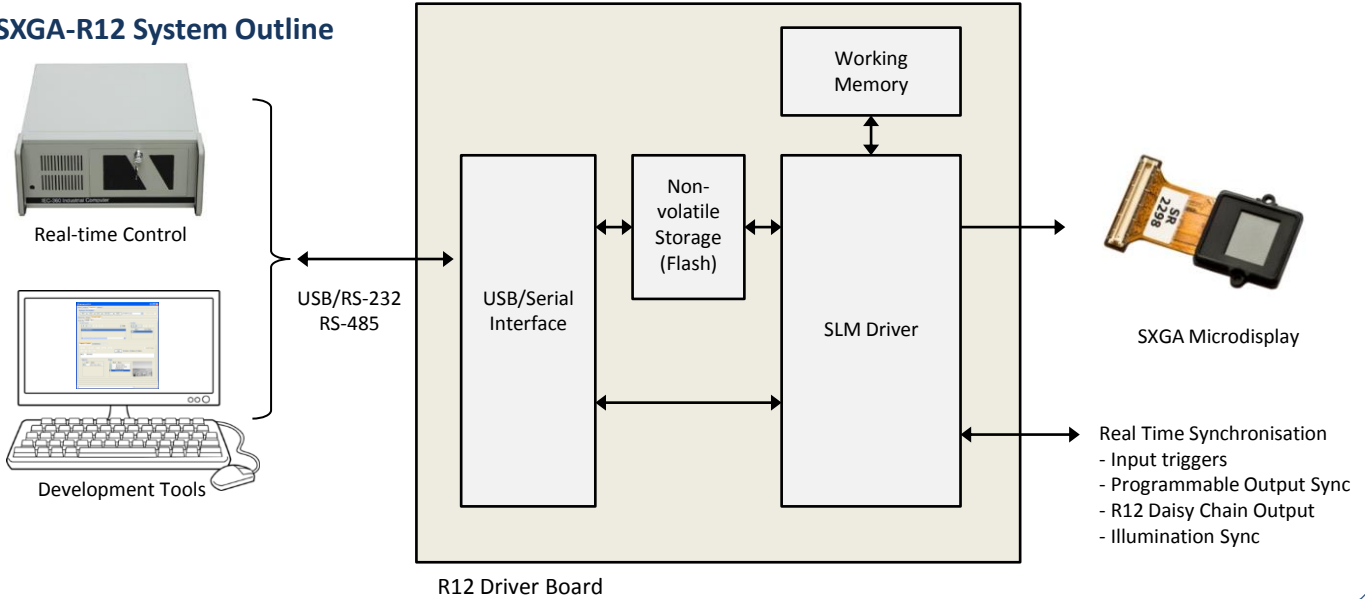
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SXGA-R12 System Outline

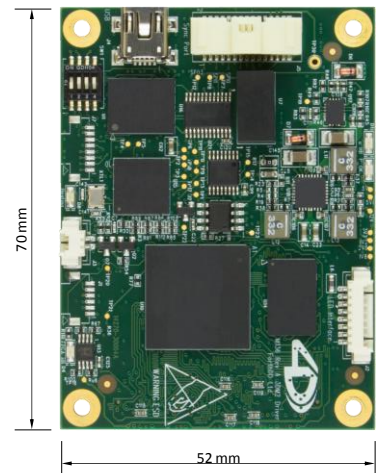


Outline Specifications

Resolution	SXGA (1280 x 1024 pixel)
Non-volatile Storage Capacity	768x 1-bit SXGA resolution bit-planes
Maximum Refresh Rate	3.2KHz Binary / 240-360 Hz 8-bit Greyscale *
Interfaces	USB 2.0 / RS-232 / RS-485
Synchronisation	Isolated Input Triggers Programmable Isolated Output Sync Isolated Illumination Sync Inter-unit Sync (Daisy Chain)
Power	+12VDC / 3.3W
Weight	32g (Driver Board & Microdisplay)
Operational Temp Range	0°C to +50°C

* Depends on image type and order

R12 Driver Board Outline Dimensions



For further information or to
Receive a quotation please contact:
T: +44 (0) 1383 827950 F: +44 (0) 1383 827951
E: sales@forthdd.com W: www.forthdd.com

4D FORTH
DIMENSION
DISPLAYS

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