

# All Digital Time Domain Imaging™ QXGA-3DM

For fast bit-plane sequencing applications

**Forth Dimension Displays presents the QXGA-3DM spatial light modulator (SLM) solution, specifically designed to meet the demands of customers who require the highest resolution SLMs.**

The QXGA-3DM is a fast switching, all digital, high performance reflective SLM solution which features Forth Dimension Displays' (ForthDD) industry proven 3.1 MPixel Time Domain Imaging™ display combined with an application specific non-video display interface.

The interface allows the system builder to precisely time their images on the SLM. Bi-directional trigger signals (either to the interface or from it) ensure accurate synchronisation with other system components such as cameras. With storage for up to 1024 full resolution binary images, the interface allows offline set up for online optimisation. No controlling PC is required during operation.

The QXGA resolution SLM delivers digitally precise images in a high fill-factor liquid crystal on silicon package. The QXGA-3DM from ForthDD offers a solution for the current and future requirements of optical metrology, structured light and super resolution microscopy applications.

## BENEFITS

High resolution, QXGA (2048 x 1536 pixel) Spatial Light Modulator (SLM)  
40 microsecond switching of liquid crystal enables the rapid rendering of complex patterns

> 94% fill factor means projection of accurate images with no visible structure

Fast 4.5kHz refresh rate at full resolution

All digital grey scale - linear response Time Domain Imaging™

Powerful GUI and API

Reduced design-in time

## FEATURES

Small Form Factor

Flexible synchronisation (bi-directional)

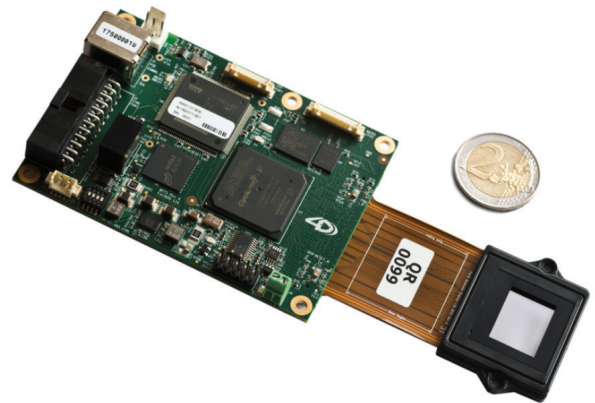
Non-volatile storage for 1024 bit-planes

LED control interface with optional LED driver board

Direct drive of the SLM

Variable display addressing sequences

RS-232 / RS-485 / USB interfaces for system control



## APPLICATIONS

High resolution structured illumination

Coded Aperture Compressive Temporal Imaging

3D AOI and SPI systems

Super Resolution and Confocal Microscopy

Lattice Light Sheet Microscopy

Structured Light Projection

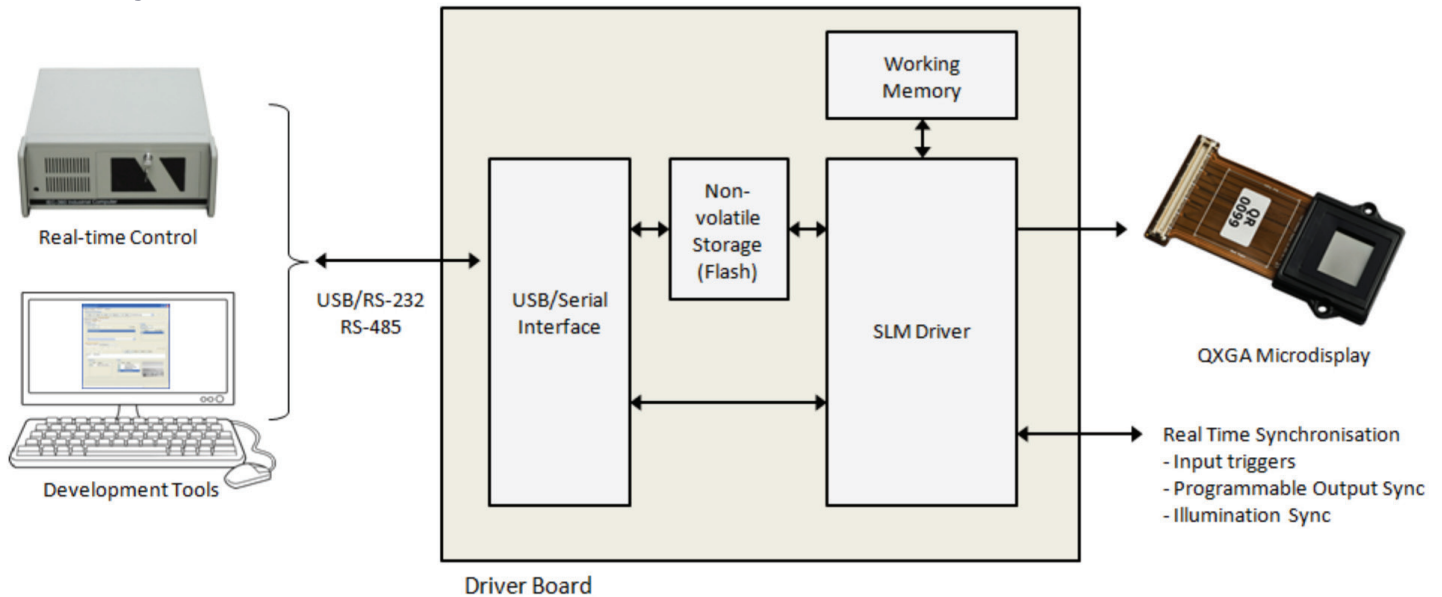


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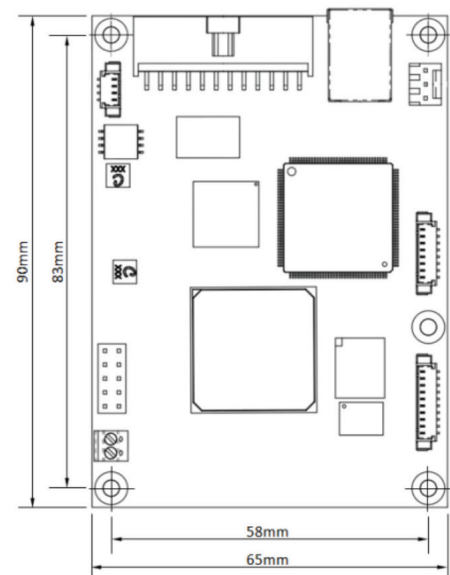
## QXGA-System Outline



## Outline Specifications

Resolution	QXGA (2048 x 1536 pixel)
Non-volatile Storage Capacity	1024 x 1-bit QXGA resolution bit-planes
Maximum Refresh Rate	4.5KHz Binary / 550Hz 8-bit Greyscale
Interfaces	USB 2.0 / RS-232 / RS-485
Synchronisation	Isolated Input Triggers Programmable Isolated Output Sync Isolated Illumination Sync
Power	+12VDC / 3W (including Microdisplay)
Weight	67g (Driver Board & Microdisplay)
Operational Temp Range	-10°C to +50°C

## 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](mailto:sales@forthdd.com) W: [www.forthdd.com](http://www.forthdd.com)



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