The QXGA-R10 from Forth Dimension Displays is a 2048*1536 pixel microdisplay and spatial light modulator (SLM) based on ferroelectric liquid crystal on silicon (FLCOS) technology for fast amplitude or phase modulation of light.

Configured as a near-to-eye (NTE) display the QXGA-R10 has over 3.1 million pixels in a 21mm (0.88") diagonal microdisplay. Using Time Domain Imaging™ to create high fidelity images, it enables immersive (>100°) Wide Field of View (WFOV) head mounted display systems to be realised without resolvable pixel structure. Colour Calibration functionality allows users to realise a standard colour space easily on the display. Whilst the small form factor drive electronics allows minimum IPD to be achieved.

As a fast SLM it can display binary bit-planes in real time at frequencies greater than 5.7 KHz enabling developments in a range of industrial and scientific applications.

### BENEFITS
- Time Domain Imaging™ colour and greyscale
- Enables 2K or Full HD video window with an OSD above and below
- High speed native WUXGA performance at 24-bit colour
- Scalable brightness and controllable colour gamut
- No sub pixels or colour filters
- Small form-factor electronics (51mm wide)

### FEATURES
- Reflective microdisplay with 0.83” / 21.0 mm diagonal active area
- QXGA resolution – 2048 x 1536 pixels with a 8.2μm pitch
- High fill factor > 94%
- 24-bit native colour depth (8-bit per colour)
- Image processing options – gamma correction/dither
- Fast switching liquid crystal (typically 40μs)
- Fast binary mode performance 5.7KHz
- Application optimised display addressing sequences
- USB Interface for system control
- GUI for system set-up and administration
- Default DisplayPort video input interface
- Frame Repeat Function – allows faster, flexible frame rates at display
- Colour Calibration of RGB sub-fields
- Daughterboard expansion header for custom system integration

### APPLICATIONS

**TRAINING AND SIMULATION**
- Monocular viewers
- Binocular viewers
- Head mounted displays (HMDs)
- Head-up displays (HUDs)

**DEFENCE**
- Helmet Mounted Displays (HMDs)

**MEDICAL IMAGING**
- Image injection for surgical microscopes
- Image guided surgery (IGS)
- Stereoscopic imaging
- Ophthamlic metrology
- Structured illumination microscopy (SIM)

**FILM & TELEVISION PRODUCTION**
- Full HD electronic viewfinders (EVFs)
- Native 2K EVFs
**System Level Overview**

**Supported Formats**

<table>
<thead>
<tr>
<th>Video Mode</th>
<th>Refresh Rate (Hz)</th>
<th>60</th>
<th>75</th>
<th>85</th>
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<th>120</th>
<th>150</th>
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</tr>
</tbody>
</table>

**Notes**

(1) 24-bit colour
(2) System is not limited to these modes

If the input video signal has a low frame rate, the Frame Repeat feature may be used to render each frame multiple times, thereby increasing duty-cycle and overall image brightness.

**Colour Calibration**

The colour calibration mode allows the colour gamut of the display system to be adjusted. Each primary colour subfield can be illuminated with a controlled amount of each of the other two primary colours. This allows desaturation and colour point adjustment of the red, green and blue primaries.