



# SVGA+ OLED-XL<sup>(TM)</sup> Microdisplay

## SVGA+ OLED-XL MICRODISPLAY CAPABILITIES

eMagin introduces the SVGA+ OLED-XL and Rev 3 series, the most power efficient OLED microdisplay solution for near-eye devices.

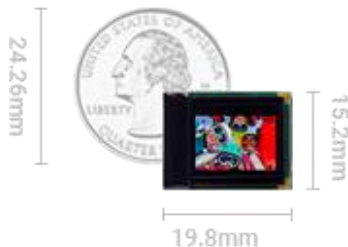
Proven in military and first-responder systems, the original SVGA+ OLED microdisplay delivers high-resolution, flicker-free images for near-eye applications – even under adverse conditions.

The new SVGA+ OLED-XL shares all the functional and rugged design characteristics of the original microdisplay. It responds instantly, even at -40°C. Its built-in video control electronics eliminate the need for additional circuit boards.

SVGA+ Rev 3 is even lower-power operation from permanently disabling the internal Vbh and Vbl references, thereby reducing internal power requirements by an average 80mW over previous SVGA+ products. In addition, this switch to requiring external references creates a microdisplay that has simpler calibration over temperature and is ideal for demanding binocular luminance and color matching.

Under typical usage conditions (60 Hz video at 70 cd/m<sup>2</sup>) the full color SVGA+ OLED-XL requires less than 165mW, while the monochrome white version uses only 115mW (in RS170 mode). And no heaters or special operating modes are required to achieve high quality, instant-on video performance at temperatures up to -40°C and +65°C.

The SVGA+ OLED-XL extends the tradition and leadership of eMagin's SVGA+ OLED microdisplay with even greater efficiency and higher brightness.



## SVGA+ OLED-XL MICRODISPLAY ADVANTAGES

- Very low power requirements
- No heaters required
- No clearing at high temperature
- Extended luminance lifetime
- Easy integration into designs based on original OLED microdisplays
- Available in full-color, monochrome white and monochrome green

## APPLICATIONS

- Night vision/thermal imaging
- Situational awareness
- Command and control
- Field maintenance and repair
- Instrumentation and test equipment
- Mobile computing systems
- Augmented reality
- Personal entertainment systems

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## GENERAL OPERATING CHARACTERISTICS

### FORMAT

- 852 (x 3) x 600

### PIXEL PITCH & ASPECT RATIO

- 15  $\mu$ m square

### COLOR PIXEL ARRANGEMENT

- R,G,B vertical stripe

### VIEWING AREA

- 12.78 x 9 mm (0.61" diagonal)

### DISPLAY ASPECT RATIO

- 4:3 or 16:9

### MECHANICAL ENVELOPE

- 19.78 x 15.2 x 5 mm (w x l x h)

### COLOR GAMUT

- >75% of NTSC gamut
- Up to 256 gray levels

### UNIFORMITY

- >85% (area uniformity as per VESA FPDM Standard)

### CONTRAST RATIO

- >800:1 (White, Green); >200:1 (Color)

#### LUMINANCE MAXIMUM

- Color XL 400 cd/m<sup>2</sup>
- Monochrome White 2,000 cd/m<sup>2</sup>
- Monochrome Green 20,000 cd/m<sup>2</sup>

#### TEMPERATURE

- Operating: -46°C to >+70°C
- Storage: -55°C to +90°C

#### HUMIDITY

- 85% RH non-condensing

### VIDEO INPUTS

#### R, G, B INPUTS

- 0 to 0.7V, compatible with VESA VSIS standard
- SMPTE-170 & PAL (monochrome only)

#### VIDEO FORMATS

- SVGA (or any window up to full array)
- Stereovision compatible

#### VIDEO SIGNAL BANDWIDTH

- 56 MHz maximum (VESA SVGA 85 Hz mode)

#### CONTROL & SERIAL INTERFACE

- Digital 3.3V CMOS

#### FRAME RATE

- 30Hz to 85 Hz

### POWER INTERFACE

#### LOGIC/ & ANALOG SUPPLY (VDD)

- 3.3V dc @ 50 mA Max.

#### TOTAL POWER DISSIPATION

- <175 mW typical (full color display)
- <115 mW typical (monochrome display) RS 170

#### OLED SUPPLY

- 4.0V dc (4.6V maximum) @ 50 mA Max.

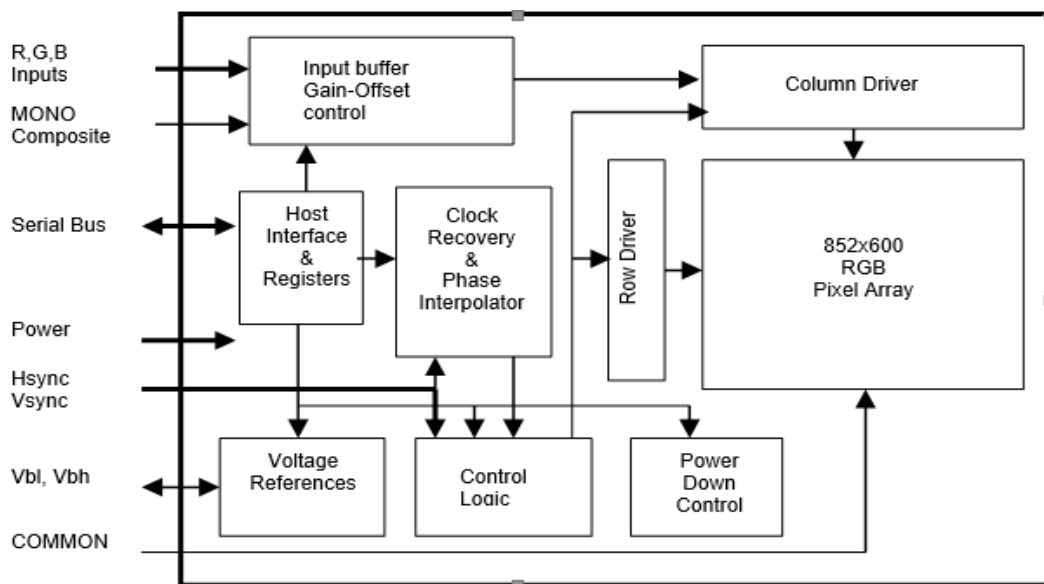
#### CLOCK RECOVERY

- PLL

\* Data represent performance at 20°C for standard commercial and industrial pricing.

Characteristics will vary with temperature requirements. Low-cost commercial or consumer operating specifications may vary.

## BLOCK DIAGRAM



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