SVGA+ OLED-XL(™) Microdisplay

SVGA+ OLED-XL MICRODISPLAY CAPABILITIES

eMagin introduces the SVGA+ OLED-XL Rev 2 and Rev 3 series, the most power efficient OLED microdisplay solution for near-eye devices.

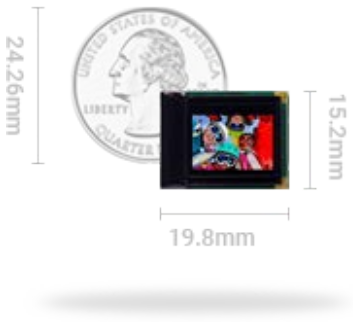
Proven in military and first-responder systems, the original SVGA+ OLED microdisplay delivers high-resolution, flicker-free images for near-eye applications – even under adverse conditions.

The new SVGA+ OLED-XL shares all the functional and rugged design characteristics of the original microdisplay. It responds instantly, even at -40ºC. 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/m2) 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 µm 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/m2
- Monochrome White 2,000 cd/m2
- Monochrome Green 20,000 cd/m2

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