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O1

Drive Electronics for eMagin SVGA+ & SVGA-3D OLED Microdisplays

FEATURES

The O1 OLED driver board for the eMagin SVGA+ OLED is designed for monocular applications and also binocular and stereoscopic applications where each display engine must move independently or receive a different video signal.

The O1's small size features the same outer dimensions as the SVGA+ OLED, therefore keeping the entire display engine as small as the display itself, 19.8mm x 15.2mm (0.78" x 0.60").

A 12 pin connector provides input of VESA VGA/SVGA video, NTSC/PAL monochrome composite video and 5V DC power. The O1 takes care of the rest including DC/DC power conversion, display initialization,

and automatic video resolution and frequency detection (multi-sync). Simply attach the OLED, apply 5VDC power and your video source, and the display is ready to use. Image control is also featured on the O1 by wiring a momentary switch to the control connector.

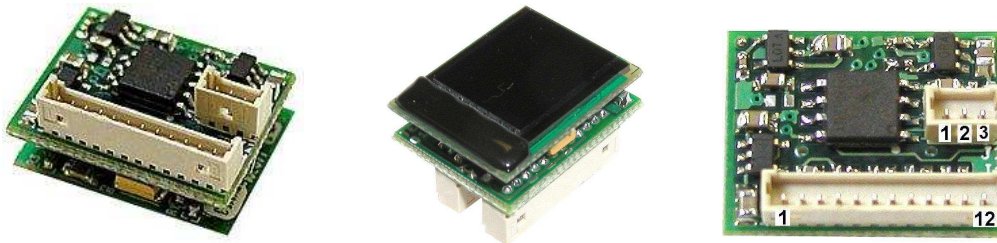
Small size and ease of use makes the O1 ideal for both initial evaluation and production systems.

NTSC & PAL versions are available.

Contact us for quantity pricing or custom firmware and layout requirements.

The OLED is sold separately.

IMAGES



INTERFACE

The O1 provides flexible image controls by allowing both gain and offset to be changed while providing two control pins for increase and decrease adjustments.

To place the O1 into gain-adjustment mode, short Control Pin 1 to ground during power-up. After the image appears on the display, release the pin and the adjustment mode will be set and recalled the next time power is cycled.

After power-up, the input pins are used for increasing or decreasing the gain or offset. The gain and offset settings will be automatically saved to non-volatile memory and retrieved at the next power cycle.

Gain and offset settings can be reset to factory default levels by shorting both control pins to ground during power-up.

Custom firmware options are available.



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Image Control Operation:

Function	J2		
	Pin 1	Pin 2	Pin 3
Change Mode / Reset: Short pins before power-up, release after image appears			
Set to Gain-Adjust Mode	X		X
Set to Offset-Adjust Mode		X	X
Factory Reset Gain/Offset levels, set to Gain Adjust	X	X	X
Operation: Tap or Hold shorted pins, changes auto-save			
Decrease Gain/Offset Level	X		X
Increase Gain/Offset Level		X	X

Connect pins indicated by 'X'

SPECIFICATIONS

Microdisplay: eMagin SVGA+ and SVGA-3D, standard and -XL series
Dimensions: 19.8mm x 15.2mm (0.78" x 0.60")
Video Format: VGA (640x480), SVGA (800x600) @60/72/75/85 Hz
 NTSC, PAL* (with SVGA+ OLED only, displayed in monochrome)
Input Voltage: 4.5 to 7.5 VDC, 5 VDC Recommended
Power Consumption: 0.25W to 0.35W** total system power, including OLED microdisplay

Input Cable Pin Assignments (J1)

- | | | |
|-----|-----------------------|------------|
| 1. | Horizontal Sync | (VGA/SVGA) |
| 2. | Vertical Sync | (VGA/SVGA) |
| 3. | NTSC/PAL Video Signal | (NTSC/PAL) |
| 4. | NTSC/PAL Video Return | (NTSC/PAL) |
| 5. | Blue | (VGA/SVGA) |
| 6. | Blue Return | (VGA/SVGA) |
| 7. | Green | (VGA/SVGA) |
| 8. | Green Return | (VGA/SVGA) |
| 9. | Red | (VGA/SVGA) |
| 10. | Red Return | (VGA/SVGA) |
| 11. | Power Ground | (POWER) |
| 12. | Power +5V DC | (POWER) |

PCB Connectors

- | | |
|----------------------|------------------|
| 12-pin 1.25mm Header | Molex 53047-1210 |
| 3-pin 1.25mm Header | Molex 53047-0310 |

Mating Wire Housing and Crimps

- | | |
|--------------------------|------------------|
| 12-pin 1.25mm Receptacle | Molex 51021-1200 |
| 3-pin 1.25mm Receptacle | Molex 51021-0300 |
| 28-32 AWG Crimp | Molex 50058-8000 |
| 26-28 AWG Crimp | Molex 50079-8000 |

Image Control Pin Assignments (J2)

1. Decrease / Set to Gain-Mode
2. Increase / Set to Offset-Mode
3. Ground

* NTSC or PAL selectable at time of order

** Exact power draw dependent on video mode, image content, and gain/offset values