



# SYL2043 Product Brief



## High Resolution LCOS Light Modulation Panel

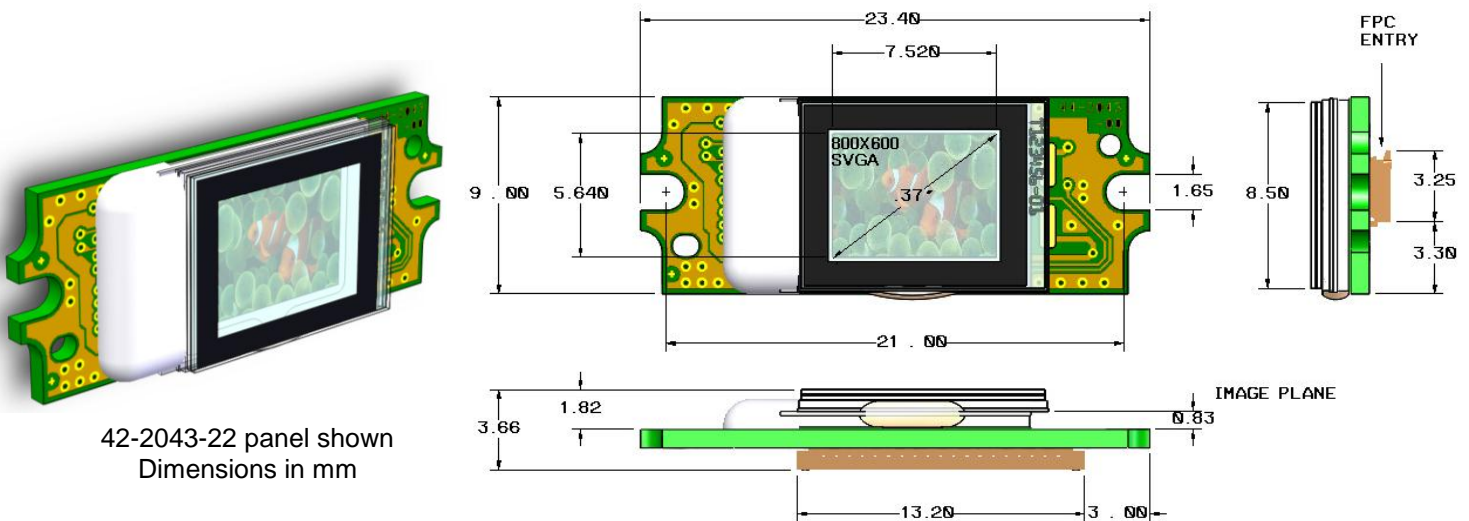
### Features

#### LCOS Panel

- Single panel field sequential color Liquid Crystal On Silicon (LCOS) with digital drive
- 0.37" active display diagonal
- SVGA (800x600) array of 9.4  $\mu\text{m}$  mirrors
- Displays sequential colors at up to 5 Color Fields per Frame (CF/F) with variable color field duration
- Color depth up to 10 bits
- Compatible with LED or Laser illumination
- Low Power: 165 mW average power (SVGA @ 3 CF/F)
- Fast TN (Twisted Nematic) liquid crystal
- Mature 0.18  $\mu\text{m}$  digital CMOS process

#### LCOS Controller

- SYA1022 LCOS controller
- Converts video signals into efficient formats used by Syndiant panels
- Up to 24 bit RGB Video Input
- BT656 input
- Supports "weave" or "bob" de-interlace
- Integrated controllers for DRAM, FLASH, and illumination devices
- I2C interface
- SSTL2 output drivers
- 1.8 V, 2.5 V I/O, 1.2 V core



### Specifications

<b>Resolution</b>	SVGA	<b>Reflectivity</b>	70%
<b>Display Diagonal</b>	0.37"	<b>Package Height</b>	9 mm
<b>Contrast Ratio</b>	500:1 QWP Compensated	<b>Package Type</b>	Panel on mini PCB
<b>Pixel Pitch</b>	9.4 $\mu\text{m}$	<b>Operating Temperature</b>	-10°C to 70°C
<b>Fill Factor</b>	95.8%	<b>Storage Temperature</b>	-40°C to 80°C

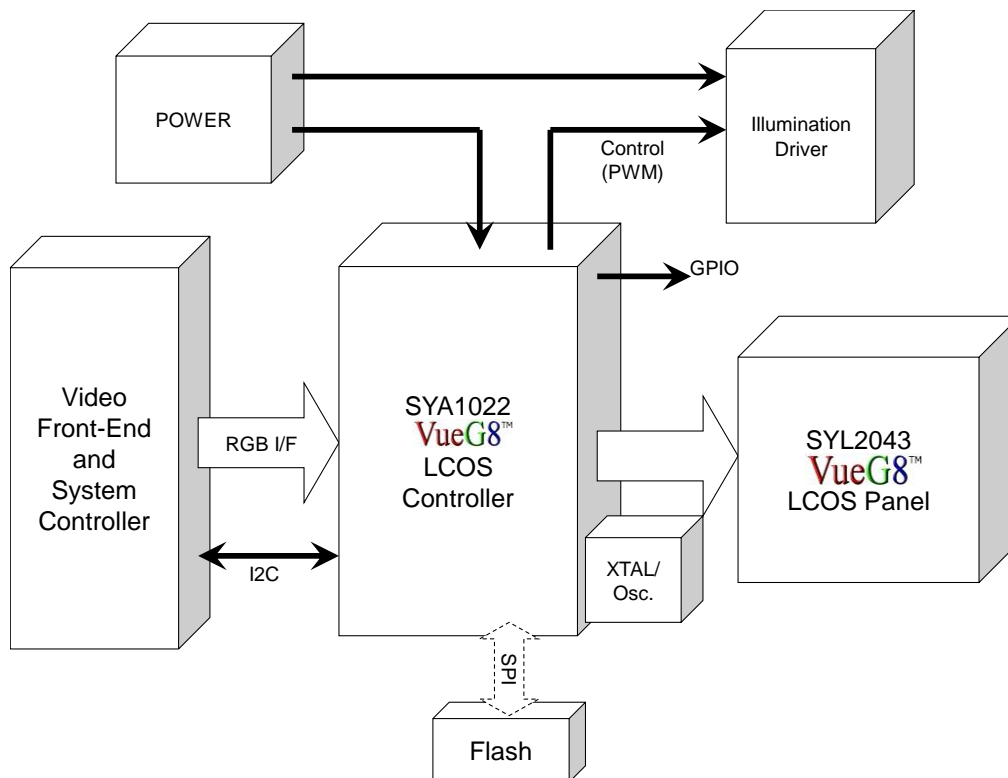
## Overview

The Syndiant SYL2043 provides SVGA resolution in a 0.37" diagonal panel, enabling ultra-portable applications to deliver good resolution and high brightness in a small form-factor. The SYL2043 provides excellent image quality with vivid colors while meeting the low cost and power efficiency requirements of battery operated devices.

Syndiant's patented LCOS microdisplay architecture integrates all-digital smart electronics onto the display panel. An application specific SIMD processor performs bit serial data manipulation to control each pixel. The intelligence is divided between the controller and the panel; the controller formats and arbitrates data flow to the panel, and the panel logic computes new pixel values and updates the pixels. This efficient methodology enables high bit depth liquid crystal drive while requiring minimal data bandwidth to the panel.

With Syndiant, it is unnecessary to sacrifice image quality in your pico projector applications.

## System Block Diagram



## Syndiant Advantages

- High resolution: Offers a rich user experience by supporting a full range of content including reading email attachments, web browsing, text, graphics, multimedia, and full-motion video
- Low power: Great for mobile, battery powered products
- Ultra-small: Form factor meets requirements for embedded applications
- High brightness: Fast LC enables saturated colors and high illumination on time
- Smooth gray scale at all brightness levels, matching the visual response of the eye