



## High Resolution 1080p 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
- 1080p (1920x1080) array of mirrors (4.27  $\mu$ m pitch)
- Displays sequential colors up to 9 Color Fields per Frame (CF/F) with programmable color field duration
- Second generation Syndiant architecture for improved power and optical efficiency
- Low Power: 360 mW average power (1080p @ 6 CF/F)
- No high voltage supply required (highest supply 3.3V/3.8)

#### SYA1311 LCOS Controller

- Embedded frame buffer
- Accepts up to 1080p resolution
- Video input formats:
  - 24-bit RGB
  - YCbCr 422 or 444
  - MIPI D/LVDS
- Keystone correction
- GPIO
- I2C interface
- Direct SPI Flash interface
- Power management

### Overview

The Syndiant SYL2281 provides 1080p resolution in a highly compact 0.37" diagonal panel, enabling ultra-portable applications to deliver high definition resolution and high brightness in a small form-factor. The SYL2281 provides excellent image quality with vivid colors while meeting the cost and power requirements of battery operated devices.

Syndiant's patented LCOS micro display 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.



Figure 1: 42-2281-xx panel

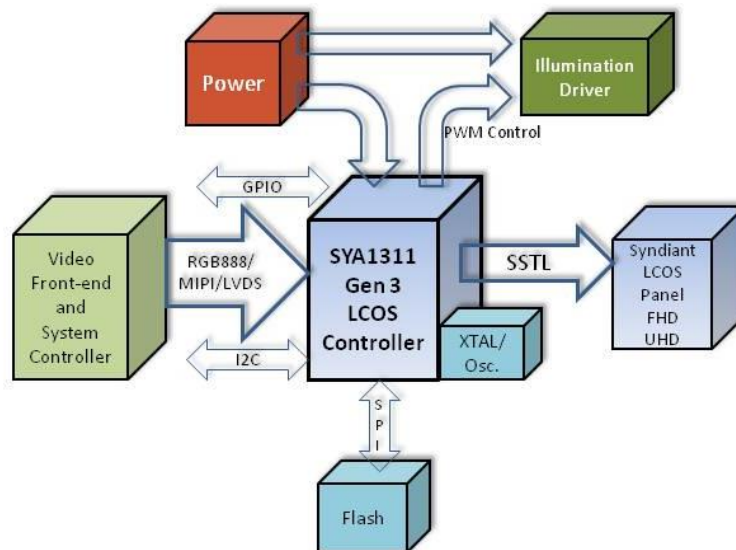
## Specifications

<b>Resolution</b>	1080p (1920x1080)	<b>Reflectivity</b>	70%
<b>Display Diagonal</b>	0.37"	<b>Package Height</b>	8.7 mm
<b>Contrast Ratio</b>	500:1	<b>Package Type</b>	Panel on mini PCB
<b>Pixel Pitch</b>	4.27 $\mu\text{m}$	<b>Operating Temperature</b>	-10°C to 70°C
<b>Fill Factor</b>	89.5%	<b>Storage Temperature</b>	-40°C to 80°C

## 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

## System Block Diagram



## Mechanical Dimensions

