SHARP

Enabling Digital Solutions to Replace Poster Printing





ePoster Display Module Technology

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INTRODUCTION

Sharp is an industry leader in low-power display technology. Our solutions, including Monochrome and 64-Color Memory-In-Pixel (MIP) displays, are now augmented with the near-zero-power ePoster display module. ePoster combines Sharp's IGZO backplane with E Ink's latest full-color Spectra™ 6 reflective ePaper technology. This technical brief highlights the features and benefits this unique combination brings to the paper-replacement display market.

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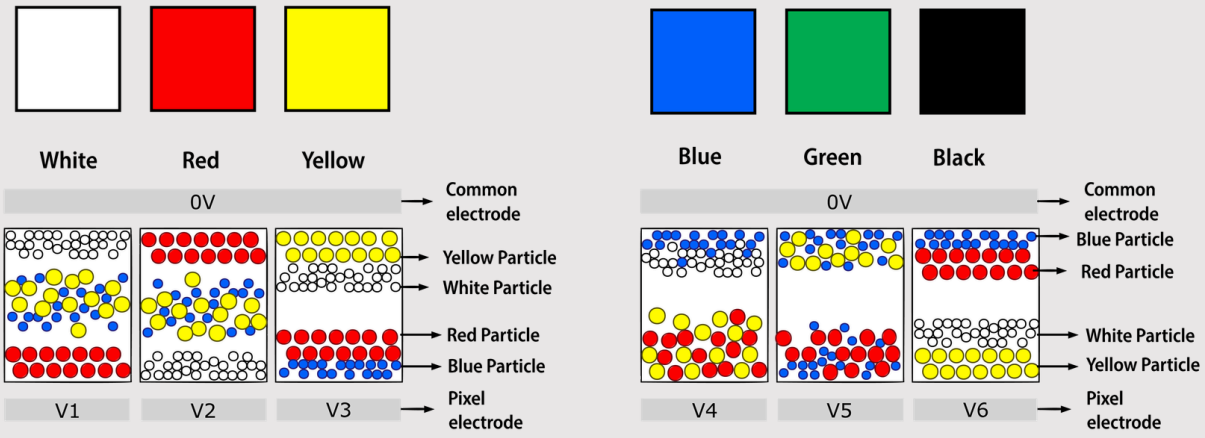
E Ink Spectra™ 6

E Ink Spectra™ 6

E Ink's latest color technology moves well past the performance of the previous versions. It can produce vivid, full-color images that are capable of print-quality rendering. This is due to E Ink's patented multi-color, micro-cup technology coupled with their advanced color imaging algorithm. It utilizes the six primary colors of Red, Green, Blue, Yellow, Black, and White.

Enhanced Color Gamut by E Ink's Advanced Color Imaging Algorithm

Four particle colors/six optical states:



ePoster Features

- Resolution up to 200 PPI
- 60k color gamut
- Reflectivity = 30%
- Contrast Ratio = 20:1
- Zero-power static image hold
- Operating Temp = 0° C to +50°C
- Image update time = 21s

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Sharp's IGZO Backplane

Indium-Gallium-Zinc-Oxide (IGZO) is a unique semi-conductor material that provides much improved TFT performance for active-matrix display arrays. It provides much higher electron mobilities compared to traditional a-SI backplanes. This enables higher PPI resolutions, faster array scanning, and very thin borders around the display matrix.

ePoster Comparison

Below is a comparison of the Sharp ePoster module to a typical implementation.

Features	31" Module	Sharp ePoster
Backplane + EPD	a-Si + Spectra™ 6	IGZO + Spectra™ 6
Panel size	31.5" Landscape	28.5" Portrait
Resolution	2,560 × 1,440	2,160 × 3,060
PPI	94 PPI	131 PPI
Border size	L/R 3.6mm T 4.8	L/R/T 3.0mm
Module	EPD module + PMIC Bd.	EPD module + TCON Bd.
Host I/F	SPI	USB
Image Update	Flashing Update	Scrolling Update

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ePoster Benefits



ePoster Benefits

- A2 portrait mode is suitable for replacing paper posters.
- Higher resolution/higher PPI enables print-quality images.
- Small borders enable small mullions for tiling applications.
- Scrolling update is less intrusive visually.
- The USB I/F enables ease of use and fast data transfers.

Reflective performance negates the need for the high-power backlight required for traditional transmissive LCD displays. Also, the image update power is only 2.5W and then zero power until the next update. This greatly simplifies thermal design considerations for the sign and enables installations that don't require line power, negating the time and expense of permits and power installation.

ePoster-enabled signage can use solar, battery, PoE, or PoWiFi. The solution can be designed to utilize various connectivity options such as 4G, Wi-Fi or LAN to take advantage of existing cloud-based content management services.

Summary

Sharp's ePoster display module is perfect for paper-replacement signage applications. E Ink's Spectra™ 6 and Sharp's IGZO backplane combine to provide high-resolution, high color gamut, print-quality image rendering. The low-power operation of the display enables signage products that do not require line power and can take advantage of various wireless connectivity options for content management.

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