



Z86D-3 SVGA Microdisplay

Delivering the next generation of unsurpassed image quality for text to full-color, full-motion video in product applications.

The Zight Z86D-3 full-color full-motion video microdisplay is our newest generation of award-winning SVGA resolution display technology. The Zight Z86D-3 SVGA microdisplay delivers industry leading image quality via its reflective field sequential Dynamic Nematic Liquid Crystal on Silicon™ (DNLCOS) platform, and introduces a host of new improvements that lower power consumption, improve optical design flexibility and enhance system integration and automated assembly handling.

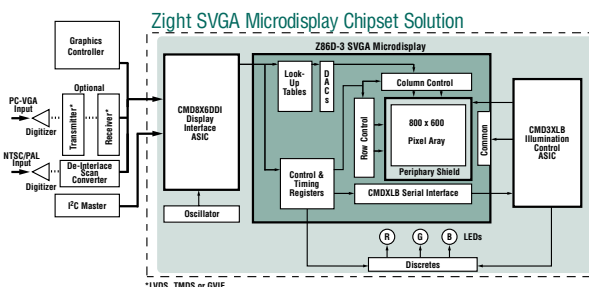
Lower Display and System Power! ... Easier to Integrate! ... Improved Mechanical Design!

The Zight Z86D-3 microdisplay is positioned as the highest image quality full-motion SVGA resolution microdisplay in the market. It is designed to support the full range of content from text to full-motion video. The Z86D-3 feature set balances the requirement for low power, with the rich color depth, high pixel fill factor, and high refresh rate required for mobile microdisplay applications.

The Z86D-3 has an active image area that measures 9.6 mm (H) x 7.2 mm (V) and has a generous 12 μm x 12 μm pixel pitch to support a number of optical design approaches. The pixel mirror size of 11.6 μm x 11.6 μm creates a fill factor of 93% (the industry's highest) that yields exceptionally bright, high quality, nonpixelated images. The digital field sequential color interface architecture delivers 18-bit color depth. Performance isn't compromised by using dithering that may result in undesirable contouring, rather we have integrated DACs and 24-bit look-up tables (LUTs) to offer superior chroma and luminance optimization. What's more, its industry recognized 120 Hz high refresh rate and crisp contrast ratio of 100:1 make it a solid design choice for computing, entertainment, digital imaging and wireless applications.

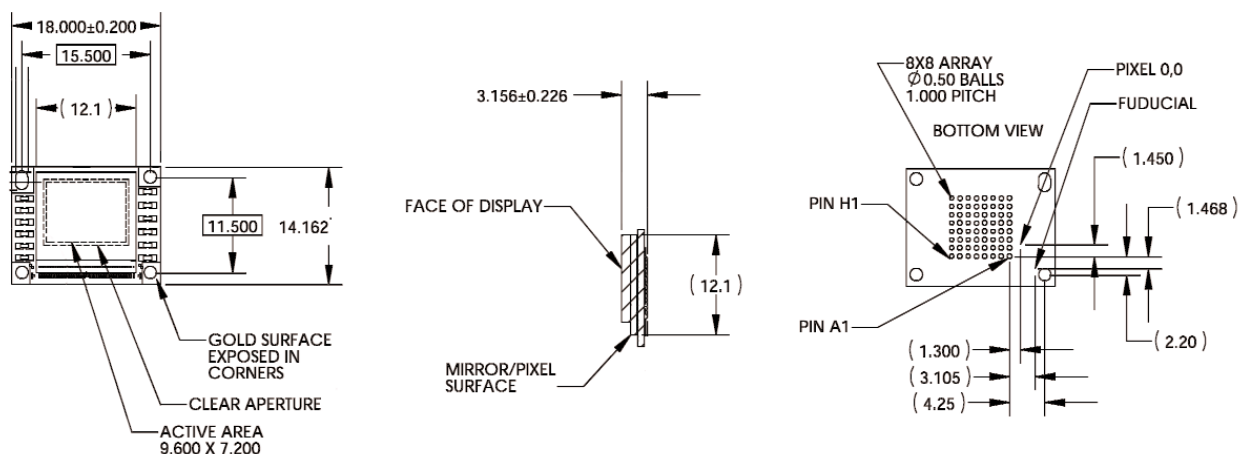
Recent improvements in this 2nd generation design have enabled a 22% reduction in display power requirements! Silicon integration improvements, support for multiple color depth options, and reduction of discrete system level component requirements have further reduced the overall system power requirements. With the Zight total chipset solution, product developers no longer have to compromise image quality and performance at the expense of battery life.

To date, Zight is the only company in the world to offer a BGA-based microdisplay. Zight has improved its original design and now offers OEMs even more benefits when using automated pick-and-place equipment in production. The new *frameless* version of the Z86D-3 microdisplay, along with improved fiducials, ensures that the display can be integrated into the most challenging monocular, binocular or stereoscopic optical designs. Plus, Zight's ability to deliver product in volume -- due to its use of standard low-voltage CMOS silicon, off-the-shelf display assembly materials and proven manufacturing processes -- assures OEMs and ODMs the highest possible microdisplay performance and quality, with superior supply assurance.



Key Features and Benefits

- SVGA resolution matches market requirements for mobile computing, entertainment, imaging, and communications devices
- Rich non-dithered color depth supports text, images, and full-motion video content
- High fill factor eliminates pixelation
- High refresh rate eliminates flicker and neutralizes color break-up and motion artifacts
- Low display and system power requirements enables use in portable product applications
- Digital interface supports a variety of tethered and embedded designs
- BGA configuration enables use in automated manufacturing processes
- "Frameless" design permits incorporation into challenging optical designs
- Suitable for applications in monocular, binocular, and stereoscopic products
- Wide operating and storage temperature range supports consumer environments



Specifications - Zight Z86D-3 SVGA Microdisplay

Technology	Dynamic Nematic Liquid Crystal on Silicon
Color Method	Single panel, field sequential
Display Diagonal	12 mm/.47"
Display Image Size	9.6 mm x 7.2 mm
Resolution	SVGA, 480,000 pixels (800 columns x 600 rows)
Pixel Pitch	12 μ m x 12 μ m
Fill Factor	> 93%
Color Depth	Configurable up to true 18-bit (262,144)
Color Palette	24-bit (16.7 million colors) using look-up tables
Contrast Ratio	100:1
Refresh Rate	Up to 120 Hz refresh rate/360 Hz field rate
Interface	Digital RGB in field sequential format Support for LVDS, TMDS or GVIF interfaces
Supply Voltage	5 V
Package Type	64-pin BGA (Ball Grid Array)
Package Size	18 mm W x 14.16 mm H x 3.16 mm D
Weight	1.2g
Operating Temperature	0° to 60° C
Storage Temperature	-20° to 80° C



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Specifications are targeted measurements, subject to change without notice.

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