Planar at Glance

• Planar Systems Inc.
• Founded in 1983, I.P.O. in 1993  (Nasdaq: PLNR)
• Headquarters in Beaverton, Oregon
• Strong history of display technology innovation over 25 years
• Provider of specialized electronic displays
• 2007 revenue (fiscal year ends Sept.)  $272 million
Global Locations

- Beaverton, Oregon
- Waltham, Massachusetts
- London, England
- Paris, France
- Albi & Saint-Seimin-sur-Rance, France
- Rome, Italy
- Espoo, Finland
- Ras Al Khaimah, UAE
- Shanghai, China
- Taipei, Taiwan
- Englewood, New Jersey
Business Strategy

• Core competence: specialty displays
• Specialty display market contains many application segments with specific customer groups
• Each Business Units is dedicated to a customer segment with fitting display solutions
Stereoscopic Monitors
Why use 3D Displays?

- It’s the natural progression for display evolution:
  - Monochrome ➔ Color ➔ 3D

- There are some tasks that require stereoscopic viewing

- 3D viewing potentially provides a way to extract information from complex images faster and more accurately
  - Potentially save time and improve efficiency
  - Potentially reduce error in image analysis
  - Potentially discover information in 3D that is not visible in 2D

- 3D viewing provides a more interesting and attention-getting presentation medium for users.
Why is 3D Imaging Gaining Wider Use

- Inexpensive compute power
  - Microprocessors
  - High performance graphics cards
- Widely available content
  - Complex data and images, especially medical
- Overload of imaging information – need to increase rate of comprehension
- Suitable, affordable display technology
  - e.g. high resolution Active Matrix LCDs and DLPs
- New interest
StereoMirror™ Monitor

• A simple design that integrates two LCD monitors into a stereoscopic display

• It uses a beamsplitter at the bisecting angle between the two monitors to fuse the right and left images

• Planar Systems incorporated the StereoMirror™ technology into the SD1710 released September 2005, their first stereoscopic monitor product using 17-inch SXGA (1280x1024) displays
StereoMirror™ Monitor Operation

The axis of polarization is horizontal in the light path seen in transmission, but is vertical in the reflected light path.
New StereoMirror™ Monitors

- The SD2020 and model was released in June of 2006
- The SD2020 uses twin 20-inch LCD monitors with UXGA (1600x1200) resolution
- The new SD2420W is a 24-inch wide-format stereo monitor with WUXGA (1920x1200) resolution
- Moreover the new SD2620W is a 26-inch wide-format stereo monitor with WUXGA (1920x1200) resolution
- These two new models have significant improvement in brightness (200 cd/m²), higher stereo contrast (200:1 measured) and reduced stereo crosstalk (<0.2%)
Stereo or 2D?

Any of the SD monitors can be switched from 3D stereo to 2D simply by turning off one of the monitors or by sliding the mirror at first backwards and then cautiously lifting the mirror to an up position.

Pull the sliding mirror cautiously forward and lower it to go back to stereo viewing position.
Side Monitors

• Any of the SD monitors can be used with additional side monitors simply by using a second graphics card compatible with the first.

• We would recommend a computer with two PCI-Express graphics card slots and two nVidia Quadro FX graphics cards such as Quadro FX 3500, 4500 or 5600 for the stereo monitor and a Quadro FX 1400 or 1500 for the side monitor.

• The side monitor should have a different polarization angle.
  - Check the price list for the LCD monitor suitable with SD2020, SD2420W and SD2620W.
  - Again check the LCD monitor from the price list for SD1710.
Dell M90 Laptop

Dell M90 is the first laptop to offer the Quadro graphics card and support dual output stereo.

The analog VGA output goes to the lower StereoMirror display while the digital DVI output goes through the mirror flip card, then to the top display.

Socet Set will work in the nView Clone mode for stereo.
Planar’s SD monitors are addressed simply via any of several existing stereo modes in Windows, DirectX or OpenGL applications and with a number of commercially available graphics cards.
SD Monitors with SOCET SET & SOCET GXP

• First demonstrated compatibility with BAE’s SOCET SET in July of 2004

• Quad-buffered stereo is supported through OpenGL

• Planar’s SD line of monitors can be driven with off-the-shelf graphics cards from nVidia, Matrox and 3Dlabs
  - nVidia Quadro cards
  - Matrox Parhelia
  - Matrox Parhelia Precision SDT (mirror flip driver)
  - 3Dlabs Wildcat Realizm (may be discontinued)
New Third Party Accessories

nVidia Quadro graphics cards

Also on Planar price list:
- Quadro FX 1500
- Quadro FX 3500
- Quadro FX 4500
- Quadro FX 4500 X2
Graphics Card Setup (nVidia Quadro)

Setup the SD monitor

Set both monitors to their full native resolution

Go to Advanced Settings

Put the two monitors into Clone mode

Enable stereo in OpenGL

Use nView Clone mode for stereo display mode
Stereo Mirror Warranty Packages

• Standard Warranty 12 months included in price
  - Mirror component excluded from the warranty

• Extended Premium 3-Year Warranty package
  - Corrective process:
    - Contact Planar for user advice
    - If defect, RMA number issued
    - Replacement unit shipped by Planar within three days
      - Replacement unit warranty 90 days
    - Customer to return the original unit to Planar in the package of the replacement unit within 14 days

• Extended Premium 5-Year Warranty package
  - Same as above but for 5 years
Main market GSI and Aerial Photography

- Photogrammetric and geospatial imagery usage for mapping and surveillance
- Major software suppliers dominate the technology of changing perspective images to orthogonal images with equidistance coordinates
  - BAE
  - Integraph
  - Inpho
  - Datem
  - Leica
  - Erdas
  - ......
New Market

Oil & Gas Exploration Market

Stereo is used for:
• Seismic Interpretation
• Reservoir Modeling
• Drill Site Engineering
• Land Use Planning
3D for Medical Imaging

• Large X-ray and ultrasonic imaging companies offer 3D imaging SW and HW

• In mammography a recent report presented 30...40% improvement both in reducing false positives and increasing correct positives by using Stereo Mirror as the diagnostic tool
New Website

www.planar3d.com

Description of markets

Details on technology

Configuration of graphics cards

Setup of side monitors

Conferences Planar will attend

Browse for yourselves to find out more
How to Find Planar Documentation

• General IBU 3D product information:
  • www.planar3d.com
    ▪ Products
    ▪ Stereo markets
  
• www.planar.com/distributor
  ▪ Marketing material, photos, partner information

• www.planar.com/support/documentation/stereodisplays
  ▪ Line cards, user manuals, drawings
Planar SD Family of Stereo Monitors

Excellent Stereo Image Quality
Comfortable Stereo Viewing
Elegantly Simple