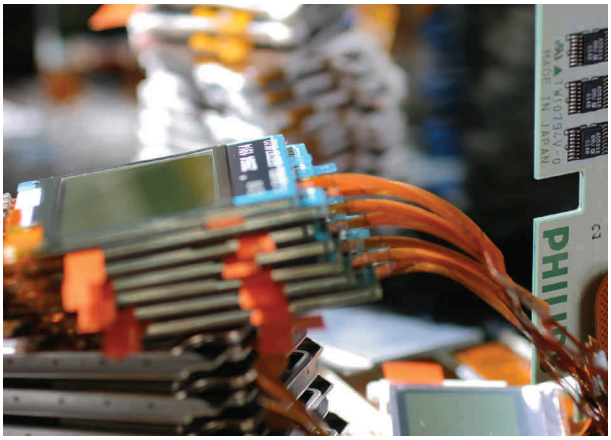
System-on-Glass Displays

Optimum circuit integration levels for LTPS mobile displays

Today's mobile handsets present several challenges to display designers - the display has to provide excellent performance and high brightness while minimizing power consumption, reducing size, and lowering overall cost. As a result, designers are looking to alternative technologies, like Low Temp poly-Silicon (LTPS), to address these requirements. LTPS enables a more highly integrated display (driver functionality can be integrated into the display's TFT arrays), but relatively low manufacturing yields have, until now, made it fairly expensive to produce.

Philips has developed an optimized LTPS technology that balances high integration with high manufacturing yields. The result is compact yet cost-effective displays that deliver superior performance.



Mobile Display Systems

Principle of the technology

Circuits using poly-Si thin-films have the advantage of increased device performance over more conventional amorphous-Silicon thin films. The transistor qualities are significantly better than those fabricated from amorphous materials, enabling the creation of far more complex circuits within the display. In this case, a study of the most cost critical components within the display system has been made and, cross-referenced with the likely impact on manufacturing yields of integrating them within the display. The result is a system optimized display design offering all of the performance benefits of LTPS, without impairing fabrication yield.

Advantages

- Optimized LTPS solutions for high-performance displays
- Selective integration of high-cost components
- Higher manufacturing yield
- Compact assembly
- Lower overall cost

PHILIPS

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