LifePix™ Enhances Mobile Displays

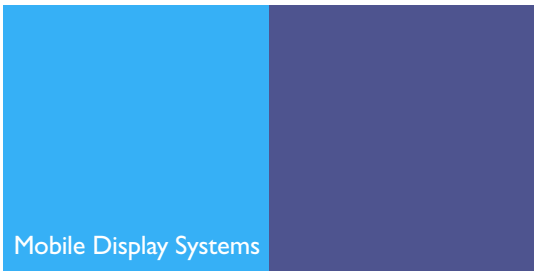
LifePix™ combines a series of unique patented algorithms that significantly improve the color and brightness/contrast performance of mobile liquid crystal displays and organic light-emitting diode (OLED) displays.

Conventional mobile display (left), example of LifePix™ (right). Notice how pale the face colors are without the color processing.

Advantages

- Optimum front of screen performance - vivid colors, higher contrast
- Most complete color, brightness/contrast enhancing and soft clipping solution in the mobile market
- Offers maximum power savings and most optimum front-of-screen performance
- Flexible, programmable algorithms
- Works with and adds value to all available display technologies
- Enhanced mobile display quality key to support the growth trend in mobile multimedia

Enhancing front-of-screen performance of mobile displays



Handset functionality has evolved from voice-only communication to interactive multimedia within a remarkably short time. Yet, mobile phone displays usually have limited color performance and are not well suited to viewing moving images such as video. Dedicated video processing algorithms can improve the color rendition of these displays considerably, while complying with low-power requirements. Philips' LifePix™ display modules are being developed to provide this enhanced image quality.

Principle of the technology

The colors of a display with a color gamut smaller than that of the EBU/NTSC standard are reduced in color saturation. A shifted and/or rotated gamut will cause hue changes and/or color/white-point shifting. This applies to all mobile displays, and these therefore require additional processing to provide adequate color rendering. To achieve this, LifePix™ includes Philips' Smart Color Mapping algorithm that identifies the optimum color ranges of the primary colors and reprocesses the color information to produce more realistic colors on mobile displays. LifePix™ also enhances picture contrast by using Philips' Dynamic Contrast Boost algorithm to dramatically improve front-of-screen performance. The latter also offers a Dynamic Backlight Control feature that provides a trade-off between most optimum contrast/brightness performance and maximum power savings.

PHILIPS

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Maturity level

- Technology demonstration available now
- IP ready for implementation - silicon (HW) implementation active

Applications

- Mobile telecom and consumer devices with LCD or OLED color displays (such as smartphones, personal audio/video players)

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date of release: May 2005

Published in Hong Kong
Philips confidential.