REALmagic™

Advanced Multimedia Analog Overlay Chip

(Technology patented by US Patent number 5528309)

Overview

The Sigma Designs EM9010 is an advanced multimedia analog overlay chip that provides the overlay functions for graphics and video display. Analog overlay technology eliminates the need for the traditional feature connector from the video display. This not only eliminates compatibility problems with different feature connector standards; it also allows the user to upgrade their display controller without worrying about compatibility issues.

The EM9010 allows to displays the best quality video in 16 Million colors even if the display resolution is set to a lower mode such as 256 colors.

The EM9010 supports up to 1600 x 1200 resolution and is compatible with virtually all VGA and graphic display standards.

The EM9010 accepts both digital and analog input for MPEG videos and has a built-in color space converter for YCbCr to RGB color space conversion, and 24-Bit RGB DAC.

The EM9010 provides three internal programmable Phase Locked Loops (PLL). One for Pixel clock regeneration locked to the Hsync input. The other two are derived form one standard 14.318MHz crystal and can be used as audio clock and system clock generation.

The EM9010 can also be used in applications with out any MPEG data. The AUX RGB connector can be used to input RGB data from an auxiliary device like 3D graphics card.

The EM9010 includes logic for auto polarity detection of VGA HSYNC and VSYNC signals. This logic ensures the positive polarity of these signals.

The EM9010 includes an integrated timing generator to generate PAL/NTSC timing signals for both PAL/NTSC Televisions formats.

The EM9010 host interface is a 2-wire serial interface to access the internal registers for register programming.

Features

- Analog Overlay of Video and Graphics
- Supports resolutions up to 1600 x 1200 at any refresh rate
- Integrated 24-Bit RGB DAC supports 16.7M colors
- Programmable RGB Color Key and Chroma Key Detection with 8-bit DACs
- 3 integrated programmable clocks
  - Video clock PLL, recovery up to 75MHz
  - Programmable System clock PLL
  - Programmable Audio clock PLL
- YUB/YCbCr to RGB color space converter
- Integrated hardware functions for automatic color and video adjustment.
- AUX RGB connector
- VGA HSYNC & VSYNC auto polarity detect
- PAL/NTSC timing generator
- 2 wire Serial Interface to access internal registers
- 5 Volt operation
- 64-pin TQFP package

Sigma Designs, 355 Fairview Way, Milpitas, CA-95035
Tel: (408) 262-9003 Fax: (408) 957-9740
www.sigmadesigns.com