

AHB TFT LCD Controller w/ DMA

SILVACO

Overview

The AHB TFT LCD Controller is a configurable core that interfaces to an AHB microprocessor bus and provides all the timing control and pixel serialization for controlling various TFT LCD Display Panels. The core can also be used with various RAMDACs to interface to VGA Monitors or VGA style LCD Panels.

The AHB TFT LCD Controller supports 24-bit true color and 16-bit color, as well as an 8-bit color display mode via the 256 Pixel Palette Ram. A 24-bit true color multiplex mode is also supported in which 3 8-bit sub-pixels are time-multiplexed (R, G, B) on an 8-bit output. Pixel clock generation, Sync Control and Display Enable controls are fully programmable and can be used with a wide range of system clock rates.

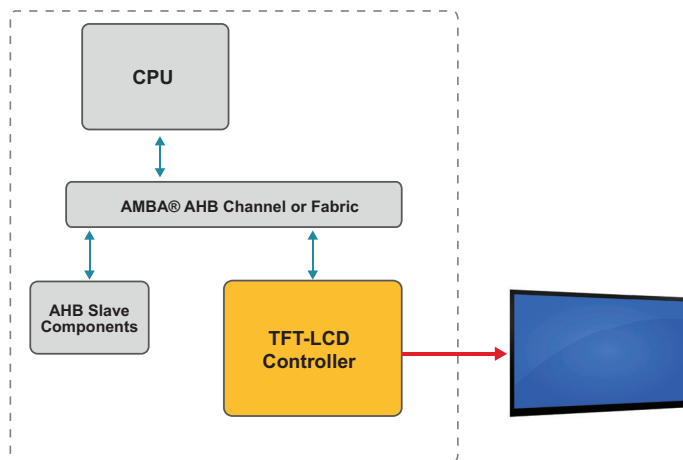
The LCD data interface contains 8-bit Red, 8-bit Green, and 8-bit Blue for a total of 24bits. The LCD data interface will work with 6-bit RGB panels as well.

Interrupt sources timed to hsync, vsync and control signals are programmable and selectable to signal the processor to update display information.

The AHB TFT LCD supports an asynchronous clock input (LcdClk) as a timebase for pixel operations.

Features

- AMBA® 2.0 Compatible
- 24-bit TFT LCD Controller.
- 32x32 Pixel FIFO.
- 256 Pixel Palette Mode.
- True Color and 24 bit Color support.
- Programmable Hsync and Vsync rates.
- Supports up to 2048 x 1536 resolution (expandable)
- Pixel DMA controller.
- Programmable Interrupt Interface.
- Supports wide variety of system clock rates.
- Asynchronous input clock for pixel operation.
- 8080-style parallel command/data interface



Deliverables

- Verilog Source
- Complete Test Environment
- AHB Bus Functional Model