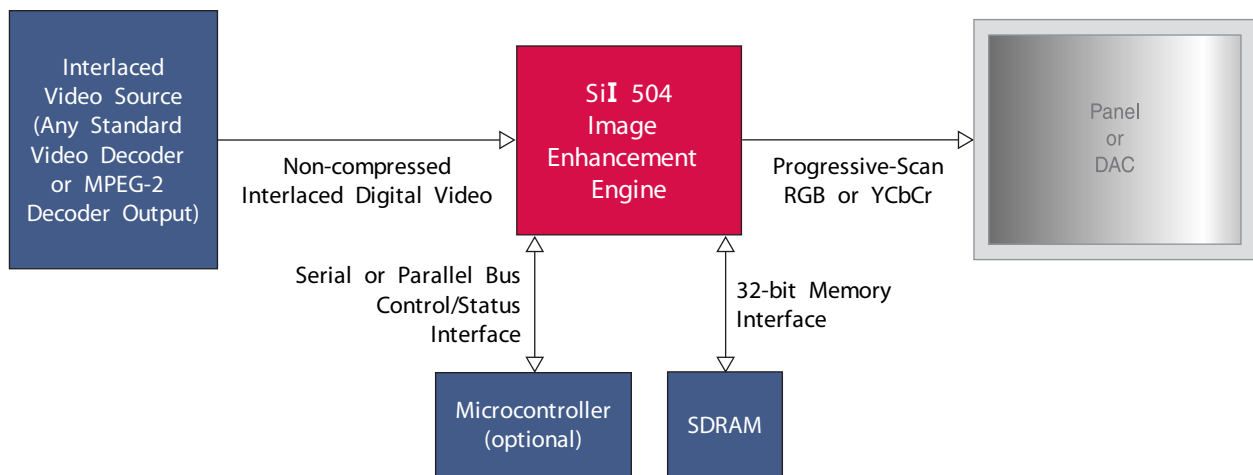


The SiI 504 is a high-quality digital video format converter used to convert any standard-definition interlaced video signal to a non-interlaced signal. This progressive output is suitable for display on LCD or DLP panels, or on progressively scanned CRT displays. The SiI 504 is targeted at products that require the highest quality deinterlacing available and is particularly well suited for progressive-scan DVD players, set-top boxes, high-definition TVs, A/V monitors and video projectors.

The deinterlacer in the SiI 504 performs the involved process of generating progressive frames from the NTSC, PAL or SECAM interlaced video input. Advanced motion-adaptive and source-adaptive techniques create an output image of incredible detail without introducing the motion and interlacing artifacts commonly associated with other interlace to progressive scan converters. Proprietary diagonal processing, transition management and post-processing technologies are designed to deal well with everything from clean, flawless video sources to worst-case, noisy, unstable sources.

The output from the deinterlacer can be in either RGB or YCbCr format. A three-channel, 10-bit color lookup table can be used for changing output brightness, contrast, gamma, hue or color temperature. A very flexible programmable video timing generator produces all video-timing (sync, blanking, etc.), providing support for unusual display requirements.





The SiI 504 | Digital Video Processor

Sil 504 Features

General

- Highly Integrated Design: Deinterlacer, Horizontal Scaler, Color Lookup Table, Memory Controller, Color Space Converter, LCD/CRT Controller
- Advanced Video Processor Architecture with real-time computation at more than 6 Billion arithmetic operations per second
- Standard host interfaces: serial bus (I²C-compatible) or 16-bit parallel bus (186 compatible)
- No programming needed for standard applications
- Simple Memory Configuration: on-chip memory controller supports dual 1Mx16 or single 2Mx32 SDRAM(s)

Deinterlacer

- Advanced Cubic Interpolating Deinterlacer
- Four-Field Processing provides high-performance, motion-adaptive image enhancement
- Diagonal processor reduces jaggies

Source Adaptive Processing

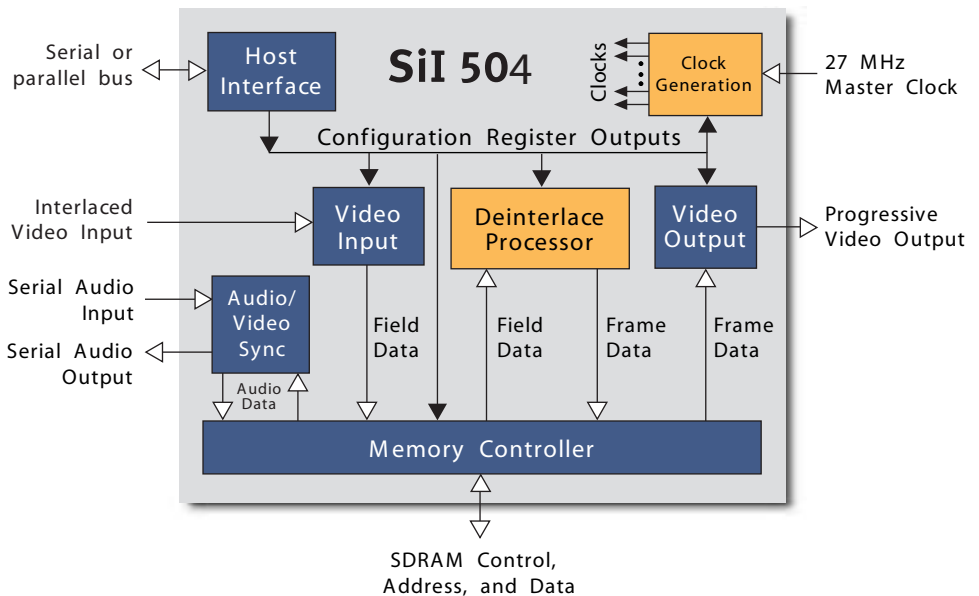
- Automatic, seamless detection of video sources: distinguishes film (for both 60Hz and 50Hz standards), video and graphics (30Fps) source masters for optimized processing
- Advanced source transition management provides smooth transitions between source types

Input

- Supports either 60 Hz, 525-line (NTSC) and 50 Hz, 625-line (PAL/SECAM) signals
- Parallel digital ITU-R BT.656 or 8/16-bit (BT.601) data with H/V syncs is compatible with almost all video and MPEG decoders

Output

- 8 or 10 bits/component/pixel, 27MHz pixel clock, 31.5KHz HSync rate



- Integrated Color Lookup Table with 10-bit color output dynamic range. Supports adjustment of output brightness, contrast, gamma, hue, color temperature
- Built-in colorspace converter provides selectable output colorspace: RGB, YCbCr 4:4:4 or YCbCr 4:2:2
- Direct Interface to TFT-LCD Panels –Supports 18-bit and 24-bit data interfaces with special features including dithering and dynamic range expansion
- Direct interface to 24 and 30-bit video D-to-A converters to drive progressive-scan CRTs or YPbPr outputs
- Multiple Output Formats
 - 720 pixels/line delivers highest resolution
 - High-quality scaling to 640 pixels/line (VGA resolution)
 - 'Squeeze' mode centers 4:3 source within a 16:9 output frame
- Power Sequencing Control for LCD panels

Environmental

- 1.8V for core
- 3.3V for I/O with 5V tolerance

Silicon Image' s SiI 504 Starter Kit

The CP504DVI Starter Kit includes all of the hardware and documentation needed to quickly bring to market new SiI 504-based applications. The CP504DVI kit is designed to assist developers of video source devices such as progressive scan DVD players and set-top boxes as well as display applications such as televisions, projectors and LCD video monitors.

Contents include:

Hardware

- SiI 504 starter kit board
- Power supply and cables

Documentation

- SiI 504 starter kit user's guide
- SiI 504 datasheet
- Reference schematics
- Application notes