



SiI 8100 Video Processor



Applications

- LCD TVs
- Plasma TVs
- HD-Ready TVs
- Multi-function Monitors

Key Features

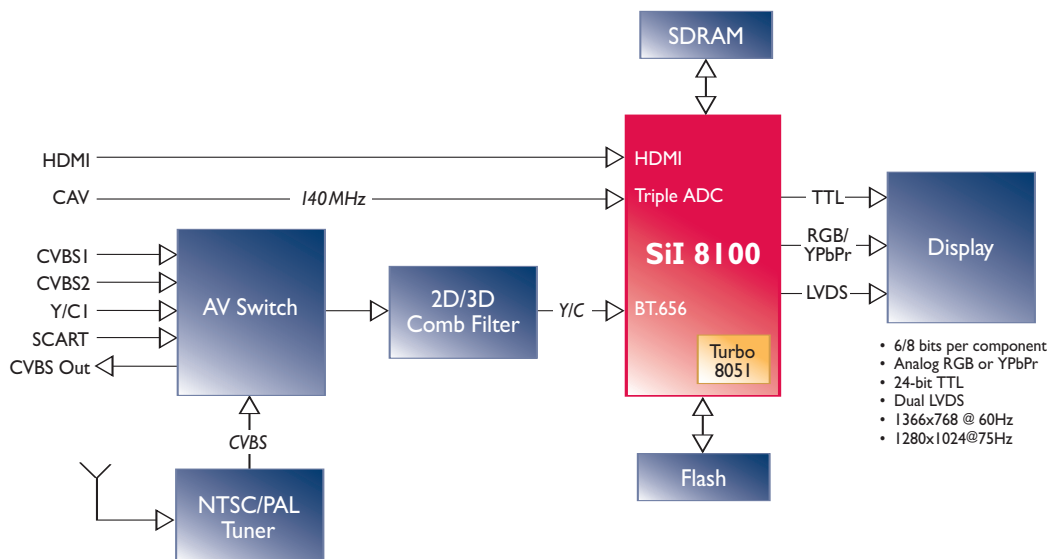
- HDMI Receiver
- RGB/YpPr Video ADC
- High-quality Scaling
- Video Deinterlacing
- ITU-R BT.656 Input
- Frame-rate Conversion
- Advanced Image Processing
- Integrated Microcontroller
- 8-bit OSD Processor
- DAC/TTL/LVDS Output

The Silicon Image SiI 8100™ video processor is a fully integrated system solution for digital televisions and multi-function monitors that work in both home theater and personal computer applications. The SiI 8100 integrates Silicon Image's industry-leading HDMI™ interface, a high-definition component video input able to capture up to 140MHz and a standard-definition ITU-R BT.656 video input port. These video inputs support high-definition television resolutions to 1920x1080 interlaced and PC graphics resolutions to SXGA (1280x1024 @ 75Hz).

The SiI 8100 incorporates state-of-the-art 3D motion adaptive video deinterlacing, advanced video scaling and frame rate conversion from 50Hz to 60Hz. The picture-in-picture (PIP) processor has programmable sub-picture location and size, and overlays one video input over another input or graphics frame to create a single output. Advanced image processing controls include programmable hue, saturation, brightness and contrast adjustments. Video and graphics can be combined easily using the built-in YCbCr ↔ RGB color space converter.

With an integrated 8051 microcontroller running at 40 MHz, the SiI 8100 is a complete single-chip solution that includes 4 kB of built-in data RAM and an integrated SDRAM controller that supports 2 MB to 16 MB of single data-rate SDRAM over a 16-bit bus. The programmable on-screen display (OSD) engine supports font- and bitmap-based graphics.

For high-fidelity displays that support 10-bit color depths, the SiI 8100 has integrated 8- to 10-bit gamma expansion. The SiI 8100 has TTL, DAC and LVDS outputs for connection to CRTs, LCD panels and plasma panels.



SiI 8100 Video Processor Features

HDMI Receiver

- 25-150MHz (1080p, SXGA)
- Multi-channel DVD audio to 2-8 channels, 32-192kHz

Component Video Input

- High-definition ADC and PLL
- RGB or YPbPr to 140MHz
- Resolutions to SXGA (1280x1024 @ 75Hz) supported

Digital Video Input

- ITU-R BT.656 and BT.601 compliant
- NTSC, PAL, SECAM standards

Advanced Video Scaling

- Bi-cubic scaling
- Moiré cancellation
- 4:3 ↔ 16:9 panoramic scaling

Video Deinterlacing

- Motion adaptive 3D deinterlacing for NTSC, PAL and SECAM signals
- Motion adaptive noise reduction

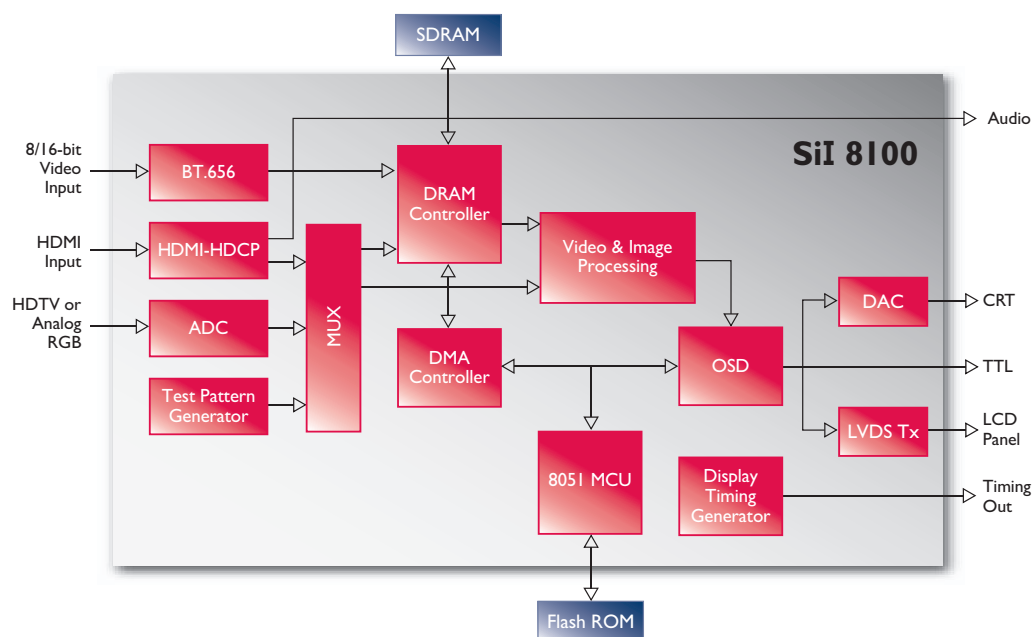
Frame-rate Conversion

- 50Hz to 60Hz video rate conversion
- Inverse 2:2 & 3:2 pull-down for film material

Picture In Picture (PIP)

- Fully programmable location and size
- Video over graphics or graphics over video

Part Number - SiI8100CLU



Flexible Image Processing

- White and black level expansion fills full color range
- Dark and gray area UV suppression reduces visible color artifacts
- Hue, saturation, brightness and contrast controls
- RGB ↔ YCbCr color space conversion
- PC-compliant sRGB color adjustments

Integrated Microcontroller

- 8051 microcontroller @ 40MHz
- 4 kB data memory (512 reserved for DMA)

Built-in SDRAM Controller

- 16-bit bus interface
- Supports 2 MB to 16 MB total SDR SDRAM

Programmable OSD Engine

- Font- or bitmap-based graphics
- 256 characters per font
- 1, 2, 4 or 8-bits per pixel graphics
- Built-in hardware cursor

Display Outputs

- 8- to 10-bit gamma correction table
- 10- to 6-bit or 10- to 8-bit temporal-spatial color dithering
- 10-bit triple DAC for RGB or YPbPr output
- 18-bit or 24-bit TTL (RGB) output port
- Dual-channel LVDS transmitter
- Resolutions to 1366x768 (WXGA) at 60Hz or 1280x1024 (SXGA) at 75Hz

Package

- 256-pin LQFP

Silicon Image

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