Silicon Image™
VastLane

VastLane™ HDMI Transmitter

HDMI 1.2 Transmitter with Super Audio CD Support

Silicon Image introduces their third generation HDMI transmitter in their VastLane product family. The SiI9034 supports HDMI 1.2 and provides advances in performance and function-ality well beyond other digital interface products on the market. As a founding developer of the HDMI specification, Silicon Image continues to develop leading-edge products that deliver digital quality to mass-market home theater systems.

The SiI9034 is a HDMI 1.2 transmitter designed for the home theater market. This fully-compli-ant device supports up to 1080p resolution at 60Hz and 24-bit color depth and provides a simple, low cost method of sending protected digital audio and video for a rich all-digital experience.

SiI9034 will fit directly into home theater prod-ucts such as DVD players and recorders, A/V receivers, digital set-top boxes and personal video recorders (PVRs). The SiI9034 is back-ward compatible with first and second genera-tion HDMI transmitters. To reduce system cost, the SiI9034 includes an additional I²C master port to control the DDC bus.

In addition to supporting the video features, the SiI9034 supports DVD audio with 7.1-surround at 192 kHz, SACD audio standards, and stereo audio at 192 kHz.

The built-in High-bandwidth Digital Content Protection (HDCP) encryption engine secures the digital link for transmission of valuable high-definition video and audio. Each SiI9034 is pre-programmed with unique HDCP keys, pro-viding an extremely high level of security while reducing manufacturing complexity and cost.

The SiI9034 is pin and software compatible with Silicon Image SiI9134 HDMI 1.3 Transmitter allowing end-users an easy upgrade path to Deep Color and High Bit-Rate HD Audio.
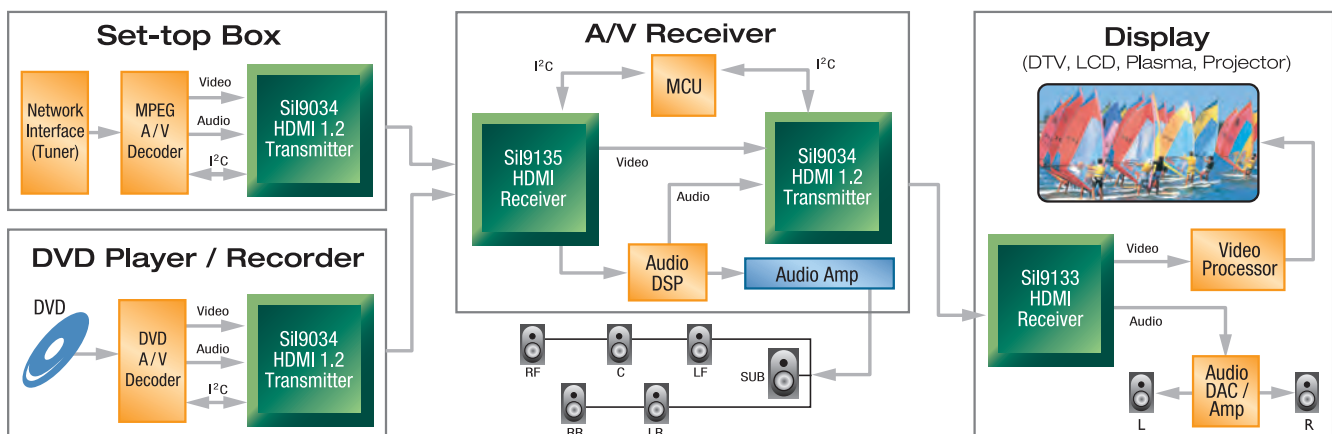
SiI9034

Applications

- **Blu-ray & HD-DVD Players**
- **DVD Players/ Recorders**
- **A/V Receivers**
- **Digital Set-top Boxes**
- **PVRs**

Key Features

- **Compliant with HDMI 1.2 specification**
- **Supports 1080p res-olution at 60Hz and 24-bit color depth**
- **Built-in HDCP encryption engine**

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

SiI9034 System Diagram

SiI9034 Features

SiI9034 Starter Kit
(CP9034HDMI)

Contents include:

Hardware
- CP9034 transmitter standalone board
- HDMI to HDMI cable

Software
- HDMIGear software tool

Documentation
- User's guide
- Schematics
- Bill of materials (BOM)

Industry-Standard Compliance

- HDMI 1.2
- DVI 1.0
- EIA/CEA-861D
- HDCP 1.1

Power Management

- 1.8V core provides low-power operation
- Flexible power-down modes

Digital Video Output

- Integrated HDMI 1.2 TMDS core running at 165MHz
- Supports 24-bit color depth and resolutions up to 1080p @ 60Hz or 720p/1080i @ 120Hz
- Flexible video interface supports DVD and HD MPEG decoders:
    - 12/24-bit RGB YCbCr 4:4:4
    - 16/20/24-bit YCbCr 4:2:2
    - 8/10/12-bit YCbCr 4:2:2 (ITU-R BT.601 & BT.656)
- Integrated YCbCr to RGB conversion
- 4:2:2 to 4:4:4 up-converter
- Programmable Data Enable (DE) generator
- 14-bit internal video processing and 14-bit to 8-bit dither

Digital Audio Output

- Dedicated 4-pin Direct Stream Digital (DSD) input to support Super Audio CD (SACD) applications
- DVD-Audio support through 4 x I²S inputs
- Supports 2-channel and 8-channel audio at 192 kHz
- Supports 1EC60958 2-channel PCM or 1EC61937 compressed audio (Dolby® Digital, DTS, etc.)
- Industry-standard S/PDIF output
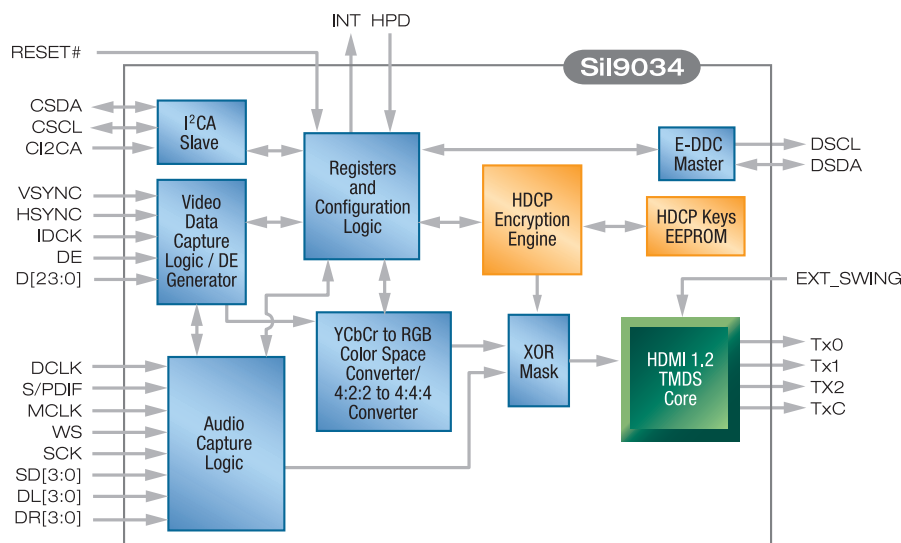
Content Protection

- Integrated HDCP cipher engine
- Pre-programmed HDCP keys:
    - Simplify manufacturing process
    - Provide extremely secure solution
    - Lower system, manufacturing costs
- Encrypts both video and audio

System Operation

- Register-programmable via slave I²C interface
- Master I²C simplifies system design
- Flexible interrupt registers with interrupt pin
- Monitor detection supported through hot plug and receiver detection
- Device address can be altered with CI2CA pin

SiI9034 Circuit Diagram

Silicon Image, Inc.

1060 E. Arques Avenue
Sunnyvale, CA 94085

T 408.616.4000
F 408.830.9530

www.siliconimage.com

Simply Stored. Connected. Beautiful.