



VastLane™ HDMI Transmitter

HDMI 1.3 Transmitter with Deep Color, High Bit-Rate HD Audio Support

Silicon Image introduces the latest high-performance HDMI transmitter in their VastLane product family. The SiI9134 supports HDMI 1.3 and provides advances in performance and functionality 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 SiI9134 is an advanced HDMI 1.3 transmitter designed for next generation Blu-Ray and HD-DVD players and recorders that require high-definition audio and Deep Color capabilities. SiI9134 supports up to 1080p resolution at 60Hz and 36-bit color depth and Dolby® True HD and DTS-HD high bit-rate audio formats to deliver a rich digital video and audio experience.

SiI9134 will fit directly into home theater products such as DVD players and recorders, A/V receivers, digital set-top boxes and personal video recorders (PVRs). The SiI9134 is backward compatible with first and second generation HDMI transmitters. To reduce system cost,

the SiI9134 includes an additional I²C master port to control the DDC bus.

In addition to supporting advanced HDMI 1.3 video features, the SiI9134 supports DVD audio with 7.1-surround at 192kHz, SACD audio standards, and stereo audio at 192kHz.

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 SiI9134 is pre-programmed with unique HDCP keys, providing an extremely high level of security while reducing manufacturing complexity and cost.

SiI9134

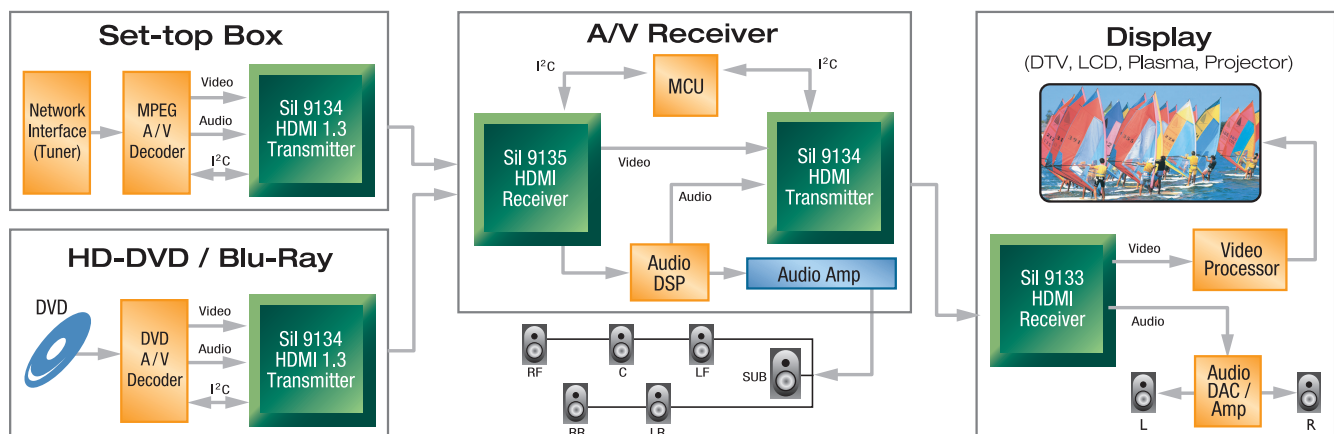
Applications

- DVD players and recorders
- A/V receivers
- Digital set-top boxes
- PVRs
- D-VHS

Key Features

- Compatible with HDMI 1.3 specification
- Supports 1080p resolution at 60Hz and 36-bit color depth
- Built-in HDCP encryption engine

SiI 9134 System Diagram



Sil9134 Features

Sil9134 Starter Kit (CP9134HDMI)

Contents include:

Hardware

- CP9134 transmitter stand-alone board
- HDMI to HDMI cable

Software

- HDMIgear software tool

Documentation

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

Industry-Standard Compliance

- HDMI 1.3
- 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 1.3 TMDS core running at 225MHz
- Supports Deep Color 36-bit color depth and resolutions up to 1080p @ 60Hz or 720p/1080i @ 120Hz
- Flexible video interface supports DVD and HD MPEG decoders:
 - 12/24/30/36-bit RGB YCbCr 4:4:4
 - 16/20/24/30/36-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 12/10/8-bit dither

Digital Audio Output

- Supports Dolby® True HD and DTS-HD up to 24Mb/s through 4xI²S inputs
- DVD-Audio support through 4xI²S inputs
- Dedicated 8-pin interface to support Direct Stream Digital (DSD) Super Audio SACD
- Supports 2-channel audio at 192kHz and 8-channel audio at 192kHz
- Supports IEC60958 2-channel PCM or IEC61937 compressed audio (Dolby® Digital, DTS, etc.)
- Industry-standard S/PDIF output

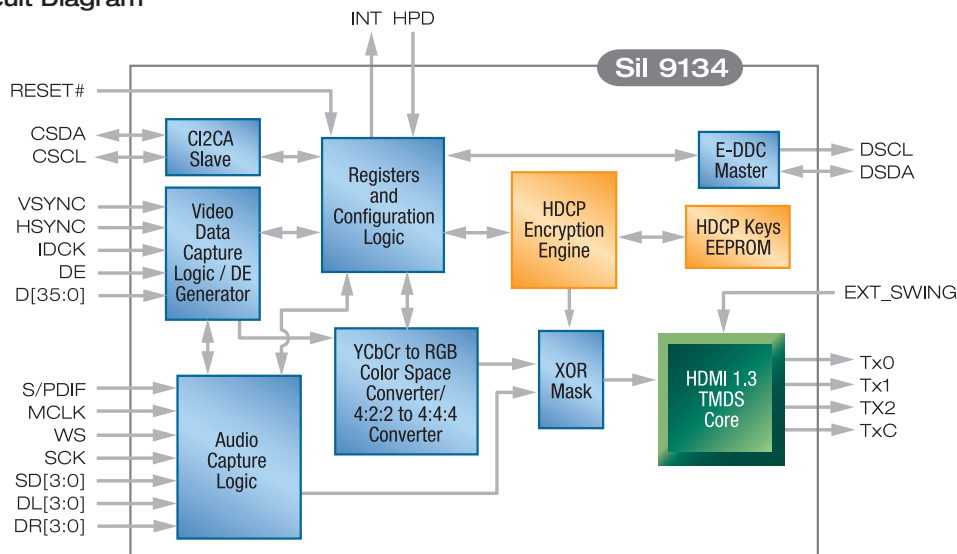
Content Protection

- 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

Sil 9134 Circuit Diagram



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