Product Brief

VastLane™ HDMI Receiver

HDMI 1.3 Compatible Receiver with Deep Color Support

Silicon Image introduces the latest high-performance HDMI receiver in their VastLane product family. The SiI9133 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 latest advances in video performance require support of displays capable of 36-bit color depth and up to 1080p resolution at 60Hz or 720p/1080i resolution at 120Hz. Silicon Image's VastLane HDMI receivers meet these demands and are ideal for rapid integration into consumer electronics system architectures.

The SiI9133 is an advanced, dual-input HDMI receiver that fits directly into digital televisions, such as, rear projection microdisplays (DLP, LCOS, SXRD, D-ILA), LCD-TVs and plasma displays. The SiI9133 is backward compatible with the SiI9033, which can reduce manufacturers' design time and shorten their overall time-to-market.

In addition to all of the features in Silicon Image's original HDMI receivers, the SiI9133 has two HDMI input ports for connecting both a DVD player and a set-top box to an DTV. The SiI9133 supports both SACD and DVD Audio, including 7.1-surround audio at 192kHz and stereo audio at 192kHz. The SiI9133 also supports full HDCP repeater functionality.

The built-in High-bandwidth Digital Content Protection (HDCP) decryption engine secures the digital link for transmission of valuable high-definition video and audio. Each SiI9133 is pre-programmed with unique HDCP keys, providing an extremely high level of security while reducing manufacturing complexity and cost.

SiI9133

Applications

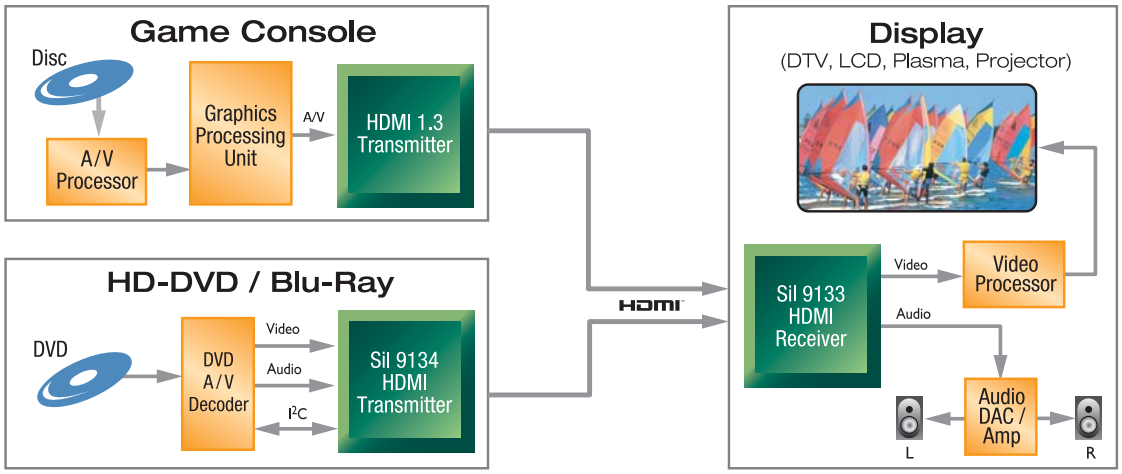
- Rear projection DTV
- LCD-TV
- Plasma display
- Front projector

Key Features

- Compatible with HDMI 1.3 specification
- Supports up to 36-bit color depth at 1080p/60Hz, 720p/120Hz & 1080i/120Hz resolutions
- Built-in HDCP decryption engine

HDMI™ HIGH-DEFINITION MULTIMEDIA INTERFACE

SiI 9133 System Diagram



Sil9133 Features

Sil9133 Starter Kit (CP9133HDMI)

Contents include:

Hardware
- Sil9133 receiver daughter board
- HDMI to HDMI cable

Software
- HDMIGear receiver 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

Digital Video Input / Output
- Dual integrated HDMI 1.3 cores
- Supports DTV resolutions up to 1080p @ 60Hz or 720p/1080i @ 120Hz with 36-bit color depth
- Flexible digital video interface:
  - 24/30/36-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.656)
  - 12-bit digital media interface
- Integrated RGB to YCbCr color space conversion with 12-bit accuracy
- 4:2:2 ↔ 4:4:4 converter with 12-bit accuracy

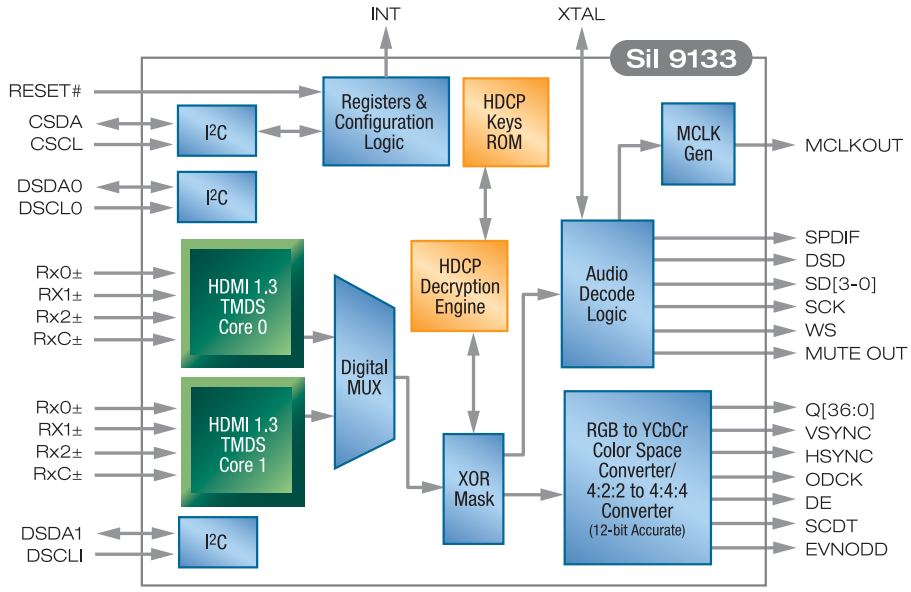
System Operation
- Register-programmable via slave I²C interface
- Auto video mode simplifies design
- Auto audio mode allows more robust system
- Flexible interrupt registers with interrupt pin

Digital Audio Output
- Industry-standard S/PDIF and I²C output
- Supports high-end audio including SACD and DVD-Audio:
  - 2-channel 32-192kHz or
  - 8-channel 32-192kHz
- Programmable I²S output supports numerous low-cost audio DACs
- Supports IEC60958 2-channel PCM
- Capable of receiving IEC61937 compressed audio (Dolby® Digital, DTS, etc.)

Content Protection
- Integrated HDCP cipher engine
- Built-in HDCP BIST
- Pre-programmed HDCP keys:
  - Simplify manufacturing process
  - Provide extremely secure solution
  - Lower system, manufacturing costs
- Built-in HDCP self-test
- Supports HDCP repeater capability

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

Sil 9133 Circuit Diagram



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Part Number: Sil9133CBHU

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