

VastLane™ HDMI Switch

3:1 HDMI 1.3 Switch with Integrated CEC Functionality

The VastLane SiI9185 is a Transition Minimized Differential Signaling (TMDS™) switch that enables the connection of multiple High-Definition Multimedia Interface™ (HDMI™) source devices to high-definition televisions (HDTVs). Based on the HDMI version 1.3 specification, SiI9185 is an advanced TMDS switch that delivers a cost-effective method for manufacturers to add additional HDMI ports to their HDTVs. Multiple HDMI ports allow consumers to connect a variety of HDMI-enabled sources to their HDTVs.

The SiI9185 is a three-to-one (3:1) switch ideally suited for use in the back panel of HDTVs and A/V receivers, allowing consumers to connect multiple HDMI-enabled devices such as high-definition DVD players, set top boxes and game consoles. The SiI9185 switch selects a single HDMI or Digital Visual Interface™ (DVI™) signal from the three HDTV receiver ports and generates fully compliant HDMI/DVI audio/video output, as well as DDC/HDCP, HPD and +5V switching in full compliance with the HDMI and DVI specifications.

The SiI9185 is among Silicon Image's first generation of devices that integrate the Extended Display Identification Data (EDID). The EDID is stored in on-board RAM that is downloaded from the system microcontroller during power

up or initialization. The EDID is reflected on each of the three HDMI ports thru the DDC bus. This allows elimination of up to three EDID ROMs, while also saving board space.

The SiI9185 provides a complete, simple, solution to enabling Consumer Electronics Control (CEC) in a DTV. CEC is a single-wire bus that transmits remote control commands throughout a home network. The SiI9185 integrates both an HDMI compliant I/O and Silicon Image's CEC API. The CEC I/O meets all HDMI compliance tests and eliminates the need for additional external components, again saving board space and thereby significantly lowering the system level control by the microcontroller and simplifying firmware overhead.

SiI9185

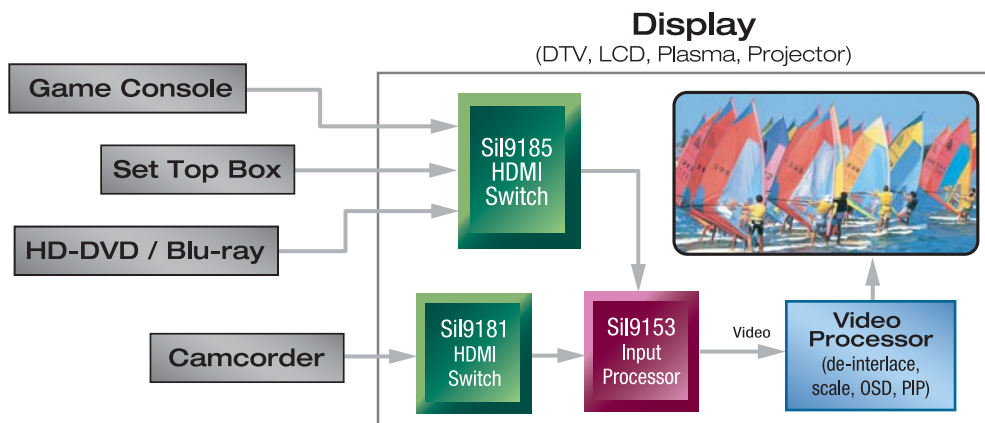
Applications

- DTVs and HDTVs
- A/V receivers,
- HDMI switches and repeaters

Key Features

- HDMI 1.3 with DDC & HPD switching
- CEC support with CEC pin & API
- Integrated EDID RAM
- Supports Deep Color
- Long cable support with built-in equalizer

SiI9185 System Diagram



HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

Sil9185 Features

Sil9185 Starter Kit (CP9185HDMI)

Contents include:

Hardware

- Sil9185 receiver daughter board
- HDMI to HDMI cable

Software

- HDMIgear receiver software tool
- CEC API Development Kit

Documentation

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

Industry-Standard Compliance

- HDMI 1.3
- DVI 1.0
- EIA/CEA-861D
- HDCP 1.1

Features

- Supports video resolutions up to 1080p @ 60Hz or 720p/1080i @ 120Hz with 12-bit color depth
- Built in Consumer Electronics Control (CEC) support
- HDMI compliant CEC I/O simplifies and lowers cost for adding CEC support to DTV
- Integrated CEC API
- Integrated EDID RAM
- DDC switching on each input port
- Individual control of Hot Plug Detect (HPD) for each port
- 5V detect to help speed soft mute of audio during plug-in, plug-out conditions
- Control via local I²C bus
- Low power standby mode to meet Energy Star and other power saving requirements
- 80-pin, QFP package

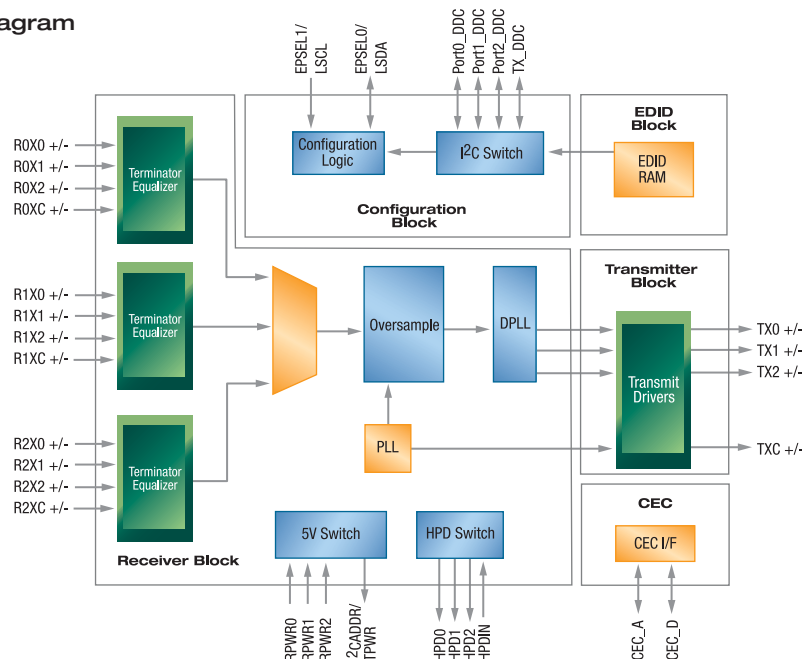
System Operation

- Register-programmable via slave I²C interface
- Stand-alone mode option
- Acts as simple switcher
- No I²C control required in this mode

Power Management

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

Sil9185 Circuit Diagram



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