

## Port Processor

Featuring four HDMI 1.3 input ports plus Silicon Image InstaPort™ technology for fast port switching

Silicon Image's port processors are a new generation of highly innovative yet cost-effective HDMI solutions for price-sensitive, mid-range DTVs. Port processors output directly to the integrated HDMI inputs in DTV SoCs, allowing manufacturers to differentiate their products by focusing their R&D efforts on video processing or other proprietary advantages.

All SiI9287 ports support the HDMI 1.3 specification and Deep Color -- the highest quality protected digital video over a single cable -- and 12 bits of video at 1080p 60Hz resolution or 1080i resolution at 120Hz. In support of HDMI functionality, the SiI9287 port processor also comes pre-programmed with HDCP keys to simplify manufacturing and provide the highest level of HDCP key security.

The Silicon Image family of port processors enable OEMs to differentiate with innovative features offering consumers real value. The SiI9287 port processor outputs to the HDMI interface, requiring no change to the system architecture while providing the flexibility to introduce features as the market demands.

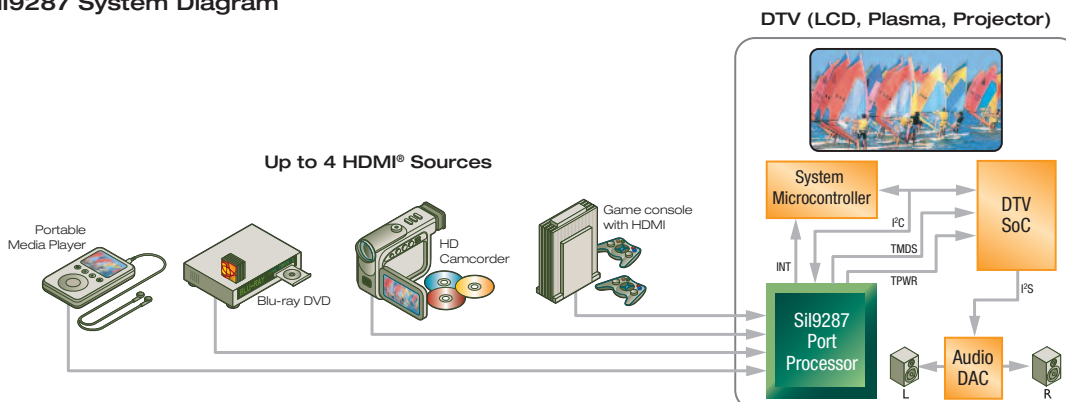
Integration of 5x EDID RAMs in the SiI9287 eliminates external EPROM components, lowers BOM cost and simplifies board design. Source devices can read EDID when DTVs are in standby mode or when the DTV is unplugged from the wall. EDID data is stored in NVRAM

and downloaded into the RAM when a source device is connected to the DTV.

The SiI9287's integrated CEC eliminates the need for the external microprocessor to manage the low-level protocol. The CEC API simplifies the firmware development of CEC commands. Using power islands, CEC and EDID functions are supported in extremely low power -- under 35mW.

Silicon Image's InstaPort technology dramatically reduces the wait time when switching between HDMI inputs by performing background HDCP authentication with all source devices connected to the DTV. When a new input is selected by the viewer it can begin streaming content immediately without waiting for HDCP authentication. As consumers continue to connect an increasing number of devices to their DTVs—from DVD players and game consoles to PCs and set top boxes—switching between them with limited delay becomes an increasingly desired feature.

### SiI9287 System Diagram



## SiI9287

### Applications

- LCD, plasma and projection DTVs

### Key Features

- Four HDMI 1.3 input ports
- InstaPort™ instant port switching technology
- Built-in HDCP decryption engines
- Five EDID RAMs per HDMI & VGA port
- Integrated CEC
- Integrated NVRAM stores EDID data
- Single 3.3V power supply

**HDMI**  
HIGH-DEFINITION MULTIMEDIA INTERFACE

instaport™

# SiI9287 Features

## SiI9287 Starter Kit (CP9287HDMI)

Contents include:

### Hardware

- SiI9287 port processor board
- HDMI to HDMI cable

### Software

- SilMon 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
- TMDS Transmitter @ 225MHz

### HDMI Inputs

- InstaPort™ technology for fast port switching between HDMI ports
- Four HDMI inputs
- Supports DTV resolutions up to 1080p @ 60Hz or 720p/1080i @ 120Hz with 36-bit color depth
- Integrated EDID for each HDMI Port and VGA port
- Integrated CEC Consumer Electronics Control

### System Operation

- Register-programmable via slave I<sup>2</sup>C interface

### 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

### Power Management

- Low stand by power mode with auxiliary power mode for CEC and EDID support

### Package

- 72-pin QFN



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