



## SiI 9190 PanelLink Transmitter

Silicon Image introduces PanelLink®, its new flagship consumer electronics product family featuring the first silicon fully compliant with the industry's broadly supported HDMI 1.0 specification. PanelLink products offer a simple, low-cost method of providing consumers with the highest-quality, all-digital home theater experience. Consumer electronics devices incorporating PanelLink technology are able to transmit and/or receive uncompressed, premium-quality, digital HD content over a single, low-cost HDMI cable. Built-in backward compatibility with the DVI 1.0 specification allows HDMI devices to connect to any DVI device, protecting consumer's home theater investments.



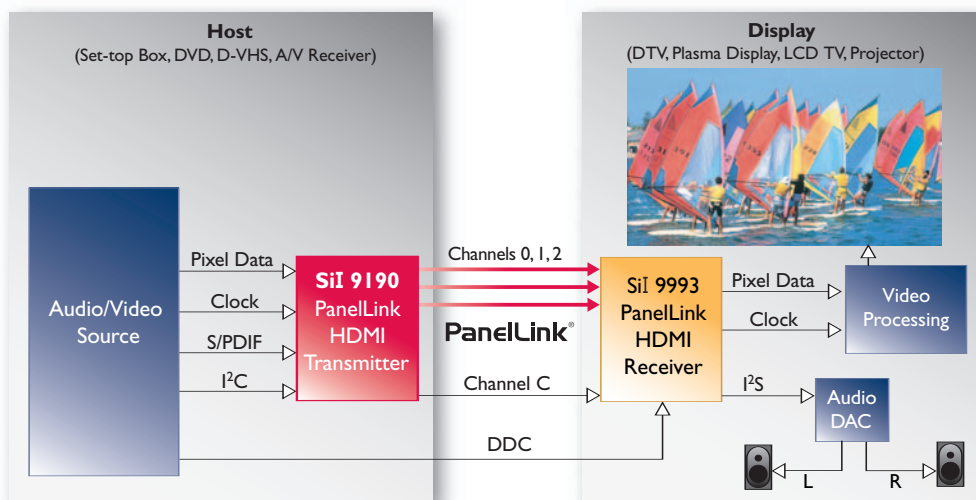
### Applications

- Digital Set-top Boxes
- DVD Players
- DVD Recorders
- A/V Receivers
- D-VHS Players
- PVRs

The PanelLink SiI 9190 transmitter sends secure digital audio and video from home source devices such as digital set-top boxes, DVD and D-VHS players, and A/V receivers, to digital display devices such as DTVs, plasma displays, LCD TVs and projectors. The SiI 9190 incorporates an extremely flexible audio and video interface. An integrated color space converter and up-converter allows direct connection to all major MPEG decoders, including DVD MPEG decoders that provide only an ITU.656 output. An industry-standard S/PDIF input accepts PCM encoded data as well as Dolby Digital, DTS and all other formats capable of being sent over S/PDIF.

A built-in High-bandwidth Digital Content Protection (HDCP) encryption engine provides a secure method of transmitting high-definition video. Each SiI 9190 comes pre-programmed with unique HDCP keys, greatly simplifying the manufacturing process, lowering costs and providing the highest level of HDCP key security available.

The SiI 9190 easily transmits HD video over cables in excess of 15 meters for greater system flexibility.



# PanelLink®

## SiI 9190 Features PanelLink Transmitter

### Industry-Standard Compliance

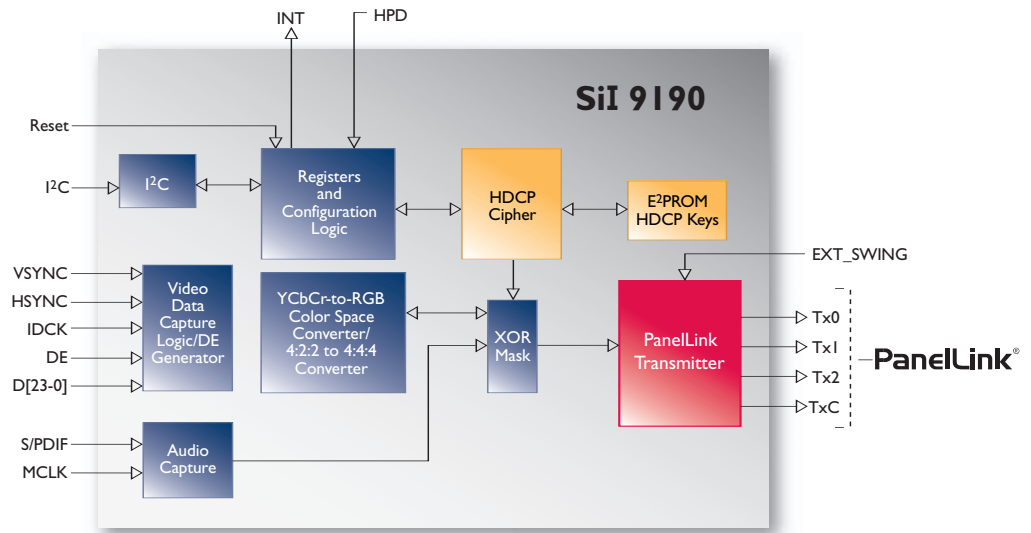
- HDMI 1.0
- DVI 1.0
- EIA/CEA-861B
- HDCP 1.1

### Digital Video Input

- Integrated PanelLink® core supports all DTV resolutions (480i/576i/480p/576p/720p/1080i)
- Flexible video interface supports DVD and HD MPEG decoders
  - 12/24-bit RGB 4:4:4
  - 12/24-bit YCbCr 4:4:4
  - 16/20/24-bit YCbCr 4:2:2
  - 8/10/12-bit YCbCr 4:2:2 (ITU.601 and 656)
- Integrated YCbCr-to-RGB color space conversion
- 4:2:2↔4:4:4 up-converter
- Programmable Data Enable (DE) generator

### Digital Audio Input

- Industry-standard S/PDIF input
- Supports IEC60958 2-channel PCM (48kHz)
- Capable of carrying IEC61937 compressed audio (Dolby Digital, DTS, etc.)



### Power Management

- 3.3V core provides low-power operation
- Flexible power-down modes
- Standby mode consumes less than 10mW

### Content Protection

- Integrated High-bandwidth Digital Content Protection (HDCP) cipher engine
- Pre-programmed HDCP keys
  - Simplify manufacturing process
  - Most secure solution available
  - Lower system, manufacturing costs
- Encrypts both video and audio

### System Operation

- Register-programmable via slave I<sup>2</sup>C interface
- Flexible interrupt registers with interrupt pin
- Monitor detection supported through hot plug and receiver detection

## Silicon Image's SiI 9190 Starter Kit (CP9000HDMI)

### Contents include:

#### Hardware

- HDMI Mother Board
- SiI 9190 Transmitter Daughter Board
- SiI 9993 Receiver Daughter Board
- HDMI to HDMI cable

#### Software

- DemoCP Transmitter Software Tool
- HDMIgear Receiver Software Tool

#### Documentation

- User's Guide
- Data Sheets
- Application Notes

**Part Number - SiI9190CT64 - Production HDCP keys**  
**SiI9190CT64 - PUB - Public HDCP keys, for development only**  
**SiI9190CTG64 - Production HDCP keys, Pb-free package**

**Silicon Image**

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