SiI 9021
PanelLink Receiver



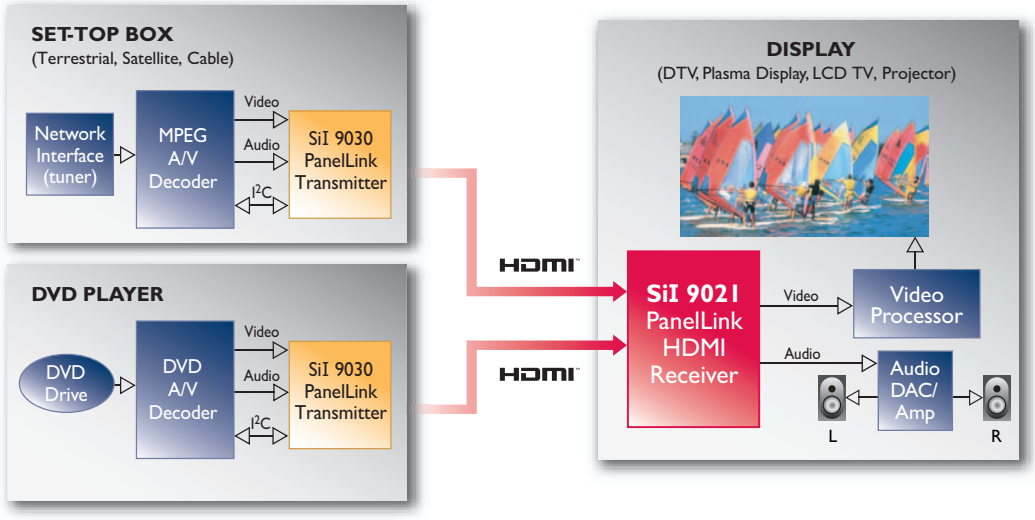
Applications

- HDTVs
- Plasma TVs
- LCD TVs
- LCOS TVs
- DLP TVs
- Projectors

Silicon Image introduces the second generation of its PanelLink® product family with advances in performance and functionality well beyond other digital interface products on the market. With the first groundbreaking HDMI parts, PanelLink brought a new level of digital quality to mass-market home theater systems. The latest advances increase audio format support, video resolution and HDMI port count, while reducing overall system cost. PanelLink products are fully HDMI 1.0 compliant. As always, Silicon Image has built PanelLink silicon for rapid integration into consumer electronics system architectures.

The SiI 9021 is a dual-input HDMI receiver that fits directly into home theater products, such as digital televisions (DTVs), including HDTVs, plasma TVs, LCD TVs, LCOS TVs and DLP TVs. To improve manufacturers' time-to-market and reduce design time, the SiI 9021 is backward compatible with first generation PanelLink receivers. In addition to all the features in the original PanelLink receivers, the SiI 9021 has two HDMI input ports for connecting both a DVD player and a set-top box to a single television. The SiI 9021 has increased video resolution to support not only 720p/1080i and 1080p resolutions, but also PC resolutions up to WSXGA.

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 SiI 9021 is pre-programmed with unique HDCP keys, providing the highest level of security while reducing manufacturing complexity and cost.



PanelLink®

PanelLink®

SiI 9021 Features

PanelLink Receiver

Industry-Standard Compliance

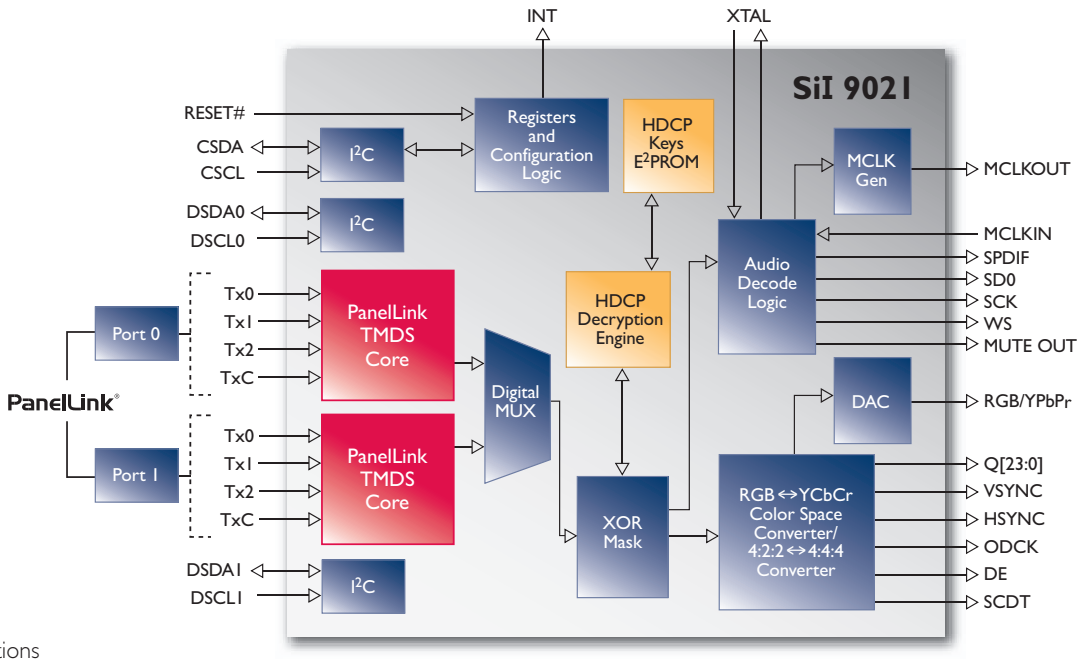
- HDMI 1.0
- DVI 1.0
- EIA/CEA-861B
- HDCP 1.1

Digital Video Output

- Dual integrated PanelLink® cores
- Supports DTV (480i/576i/480p/576p/720p/1080i/1080p) and PC (VGA/XGA/SXGA/WSXGA) resolutions
- Flexible digital video interface
  - 24-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
- Analog RGB and YPbPr output
  - Integrated 10-bit DAC
  - Separate or composite syncs (sync on Y/G)
- Integrated RGB↔YCbCr color space conversion
- 4:2:2↔4:4:4 converter

Digital Audio Output

- Industry-standard S/PDIF and I²S output
- Supports IEC60958 2-channel PCM
  - 2-ch. 32-192kHz
- Capable of carrying IEC61937 compressed audio (Dolby Digital, DTS, etc.)
- Programmable I²S output supports numerous low-cost audio DACs



Content Protection

- Integrated HDCP cipher engine
- Pre-programmed HDCP keys
  - Simplify manufacturing process
  - Most secure solution available
  - Lower system, manufacturing costs
- Supports HDCP repeater capability
- Decrypts both video and audio

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

Power Management

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

Silicon Image's SiI 9021 Starter Kit (CP9021HDMI)

Contents include:

Hardware

- SiI 9021 Receiver Daughter Board
- HDMI to HDMI cable

Software

- HDMIGear Receiver Software Tool

Documentation

- User's Guide
- Schematics
- Bill of Materials (BOM)

Part Number - SiI9021CTU: 25-112MHz (use for 720p/1080i applications)
SiI9021CTU-7: 25-150MHz (use for WSXGA/1080p applications)

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