Silicon Image™ VastLane

VastLane™ iTMDS Receiver

High-definition video solution for PC Monitors and DTVs

Silicon Image introduces the VastLane SiI7189 iTMDS receiver which uses advanced digital technology to support high-resolution digital displays for PC and HDTV applications. The iTMDS interface is ideal for internal display interconnect applications and operates with high levels of spread spectrum clocking, significantly reducing system EMI even at high operating frequencies.

The SiI7189 receiver provides two independent TMDS receiver cores that work in tandem as a dual-link receiver, or separately as simultaneous inputs. It supports regular color depth at 24 bits per pixel (bpp), or high color depths at 30, 36, or 48 bpp. VastLane digital technology resolves system level issues associated with high-speed digital design, providing the lowest cost all-digital solution.

The SiI7189 device offers High-bandwidth Digital Content Protection (HDCP) for secure delivery of high-definition video, and comes with integrated, pre-programmed HDCP keys to simplify manufacturing and providing the highest level of security.

The SiI7189 incorporates advanced automatic equalizer and PLL bandwidth for long cable support and increased interoperability.

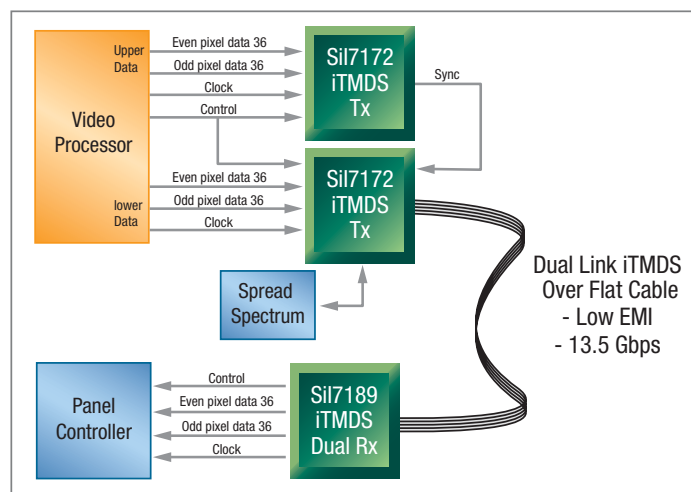 The SiI7189 is available in a 208-QFP Universal environmentally friendly Pb free package.

Applications

•Direct view HDTV (LCD and PDP) internal link

• Rear projection HDTV (DLP, LCOS, and LCD) internal link

• Projectors

• Multi-functional monitors

Key Features

• Dual receivers operate in:

- Dual Link mode (6 data channels)

- Dual Head mode (two sets of 3 data channels)

SiI7189 System Diagram

SiI 7189 Starter Kit (CP7189_7172)

These Starter kits include hardware to evaluate the SiI7189. Included is documentation to help quickly design and launch an iTMDS internal link for DTV, LCD monitor, or projector applications.

Contents include:

Hardware
- SiI7181 evaluation board
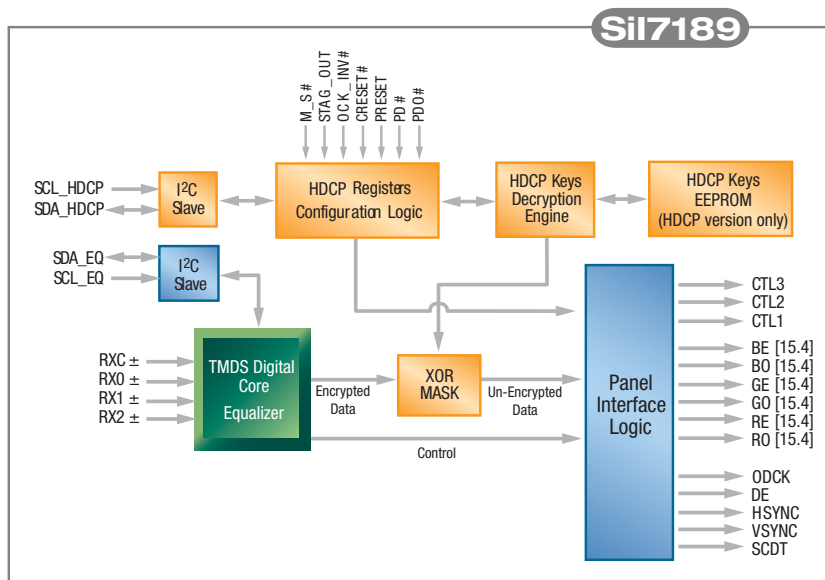- SiI7189 evaluation board

Documentation
- SiI7189 starter kit user's guide
- SiI7189 datasheet
- SiI7189 evaluation board schematics
- SiI7189 bill of materials

General

- Dual receivers operate in:
  - Dual Link mode (six data channels)
  - Dual Head mode (two sets of three data channels)
- Integrated 165MHz x 2 (330MHz - QXGA) standard pixel rate output
- High color depth input support to 225MHz x 2
- Supports HDTV resolutions (720p/1080i/1080p)
- 24-bit, 30-bit, 36-bit, and 48-bit color depth support with flexible interface: can drive out two pixels per clock for 24-, 30-, and 36-bit pixels
- Integrated HDCP decryption engine for viewing protected content, with pre-programmed HDCP keys for security and ease of manufacture
- Automatic equalizer and PLL bandwidth selection for long cable support and increased interoperability

- Flexible low power modes with automatic power down when input clock is inactive
- Cost-reducing 5V-tolerant DDC I2C interface
- Fully iTMDS-compliant, yet still interoperable in DVI 1.0 environments
- Universal Pb-free package

SiI7189 Circuit Diagram

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Simply Stored. Connected. Beautiful.

Part Number: SiI7189CMHU