SiI 7170
iTMDS Transmitter

Silicon Image

Applications

• Direct view HDTV
  (LCD and PDP) internal link

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

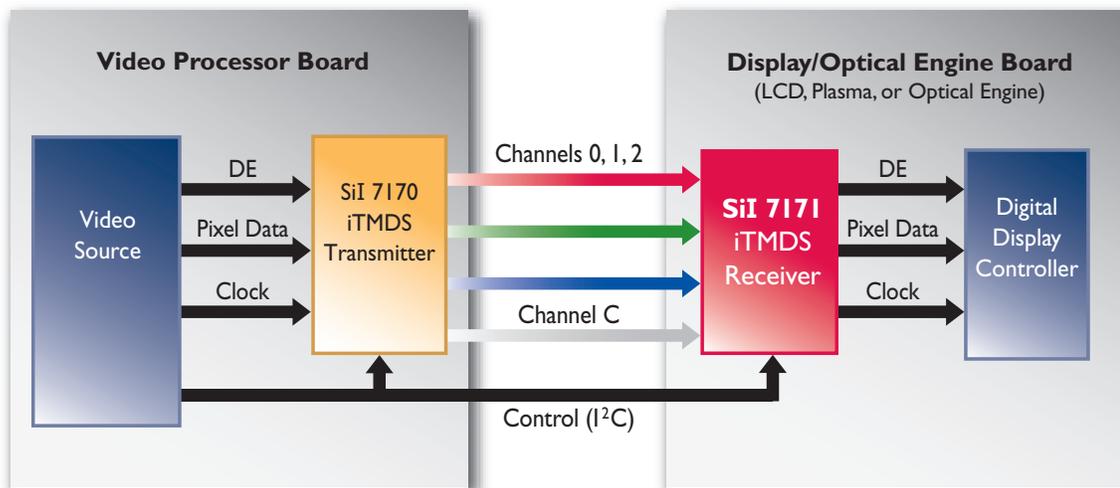• Projectors

• Multi-functional monitors

Silicon Image introduces SiI 7170™ iTMDS (internal TMDS) transmitter product for high bandwidth needs of direct view LCD/plasma and rear projection (LCOS, DLP, and LCD projection) digital televisions (DTVs), LCD monitors, and projectors.

While DVI 1.0-compliant for external applications, the SiI 7170 is ideal for internal link of DTVs, monitors, and projectors. Innovative SiI 7170 architecture adds new encoding method for high color depth support including 8, 10, 12, or 16 bits per color. Silicon Image advance design technique allows single link SiI 7170 operation of 225MHz bandwidth to support 720p/1080i/1080p resolution with 12-bit per color at 60 refresh rate. The SiI 7170 enables billions of color for HDTVs, leading to exceptional digital visual quality.

SiI 7170 incorporates advanced on-chip input clock jitter filter to ensure clean output to receiver. SiI 7170 also adds spread spectrum clock interface to significantly lower EMI. The SiI 7170 is available in a 128-MQFP Universal environmentally friendly Pb free package.

Single link SiI 7170 provides bandwidth to support today's 720p and tomorrow's 1080p digital TVs at 8, 10, 12, or 16 bits per color using only four differential signal pairs (three data pairs and one clock pair). Using today's LVDS technology will require two channel with up to 12 differential signal pairs. The SiI 7170 provides significant cost savings for the digital TV internal interface by reducing the chip count from two to one and dramatically reducing the cost of cable assembly by cutting the number of wires needed

Texas Instruments selects the SiI 7170 for 720p/1080p 10-bit Digital Light Projection (DLP) reference because it brings revolutionary solution to address the fast growing band width demand of the digital TV internal interface while reducing overall bill of material (BOM) cost.

SiI 7170 Features

iTMDS Transmitter

General

- iTMDS transmitter supporting 25MHz – 225MHz bandwidth
- Consistent, high quality digital visual experience
- Cost effective single-link support 1080p and 12-bit color
- 8-bit, 10-bit, 12-bit, and 16-bit per color encoding
- Support HDTV resolutions (720p/1080i/1080p)
- DVI 1.0-compliant transmitter interoperable with broad range of DVI receivers
- Wide spread spectrum clocking support reduce EMI system cost
- Advanced on-chip input clock jitter filter ensure clean output to receiver
- Long cable support up to 20M DVI cable 128-pin LQFP Universal Pb-free package

Input

- Flexible digital input interface
  - Single pixel per clock: 24-bit, 30-bit, 36-bit, or 48-bit
  - Two pixels per clock: 48-bit, 60-bit, or 72-bit
- Support 720p/1080i/1080p EIA/CEA-861B input timing
- Support VGA~UXGA PC input timing
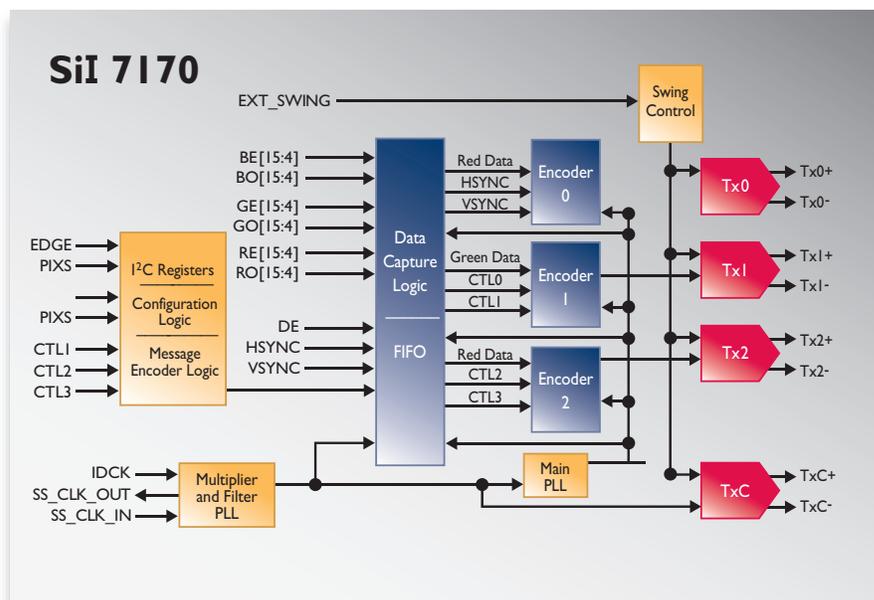- 8-bit, 10-bit, 12-bit, and 16-bit color digital RGB input

Output

- iTMDS output up to 225MHz
- 25MHz–165MHz DVI 1.0 compliant output

Power Management

- Support DVI and VESA DPMS power management functionality
- Low standby power consumption to meet energy conservation requirements

Part Number - SiI7170CMHU

Silicon Image's SiI 7170 Starter Kit (CP7170)

- The CP7170 Starter kit includes hardware and documentation to quickly design and launch an iTMDS internal link for DTV, LCD monitor, or projector applications

Contents include:

Hardware
- SiI 7170 evaluation board

Documentation
- SiI 7170 Starter Kit User's Guide
- SiI 7170 Data Sheet
- SiI 7170 Evaluation Board Schematics
- SiI 7170 Bill of Material (BOM)