12-Bit, 170 MHz Video and Graphics Digitizer with 3D Comb Filter Decoder and Quad HDMI Receiver

ADV7840

FEATURES

- Video and graphics digitizer
  - Four 170 MHz, 12-bit ADCs
  - 12-channel analog input mux
  - 525i-/625i-component analog input
  - 525p-/625p-component progressive scan support
  - 720p-/1080i-/1080p-component HDTV support
  - Digitizes RGB graphics up to 1600 × 1200 at 60 Hz (UXGA)
  - HDMI®/graphics and composite processing
  - Simultaneous HDMI and graphics synchronization processing
  - NTSC/PAL/SECAM color standards support
  - NTSC/PAL 3D comb filter
  - 3D digital noise reduction (DNR)
  - Advanced time-base correction (TBC) with frame synchronization
  - Interlaced-to-progressive conversion for 525i and 625i
  - Advanced VBI data slicer, including teletext, CC, and V-chip
  - IF compensation filter
  - Analog monitor output
  - SCART fast blank support, including slow switch detect
  - Programmable internal antialias filters
  - Support for weak, poor time base and nonstandard input signals
  - Vertical peaking, horizontal peaking, CTI, and LTI
- Quad HDMI® receiver
  - HDMI 1.3a support
    - 36-/30-/24-bit deep color support
    - Flexible audio interface (DSD, DST, Dolby® TrueHD, DTS®-HD master audio, and DTS-HD high resolution audio)
  - 225 MHz HDMI receiver
  - Repeater support
  - High-bandwidth Digital Content Protection (HDCP 1.3)
  - 36-/30-bit Deep Color and 24-bit color support
  - HDMI 1.3-compatible audio interface
  - S/PDIF (IEC90658-compatible) digital audio output
  - Programmable equalizer for cable lengths up to 30 meters
  - Internal EDID RAM
- General
  - Highly flexible output interface
  - 36-bit 4:4:4 pixel output interface
  - Dual STDI function support standard identification
  - 2 any-to-any, 3 × 3 color space conversion (CSC) matrices
  - 3 programmable interrupt request output pins
  - Advanced synchronization processing for robust synchronization extraction for poor video sources

APPLICATIONS

- Advanced TVs
  - PDP HDTVs
  - LCD TVs (HDTV ready)
  - LCD/DLP® rear projection HDTVs
  - CRT HDTVs
  - LCoS™ HDTVs
- AVR video receivers
- LCD/DLP front projectors
- HDTV STBs with PVR
- CRT HDTV
- Projectors
- DVD recorders with progressive scan input support

FUNCTIONAL BLOCK DIAGRAM

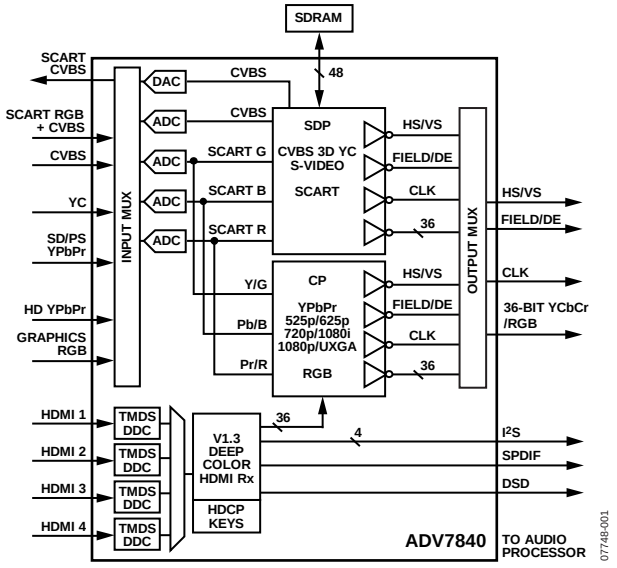

Figure 1.

For more information about the ADV7840, contact your local Analog Devices, Inc., FAE or sales office.

Advantiv® Advanced Television Solutions by Analog Devices | NSV® Precision Video by Analog Devices

Rev. SpC

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ADV7840* Product Page Quick Links

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Comparable Parts

View a parametric search of comparable parts

Documentation

Application Notes

- AN-1050: A Method for Compressing I²C Scripts for the ADV74xx/ADV75xx/ADV76xx/ADV78xx

Data Sheet

- ADV7840: 12-Bit, 170 MHz Video and Graphics Digitizer with 3D Comb Filter Decoder and Quad HDMI Receiver Data Sheet

Design Resources

- ADV7840 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

Discussions

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Technical Support

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NOTES

I²C refers to a communications protocol originally developed by Philips Semiconductors (now NXP Semiconductors).

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