



# 12-Bit, 170 MHz Video and Graphics Digitizer with 3D Comb Filter Decoder and Quad HDMI 1.3 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

- 4:1 multiplexed HDMI receiver
- HDMI 1.3, DVI 1.0
- 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

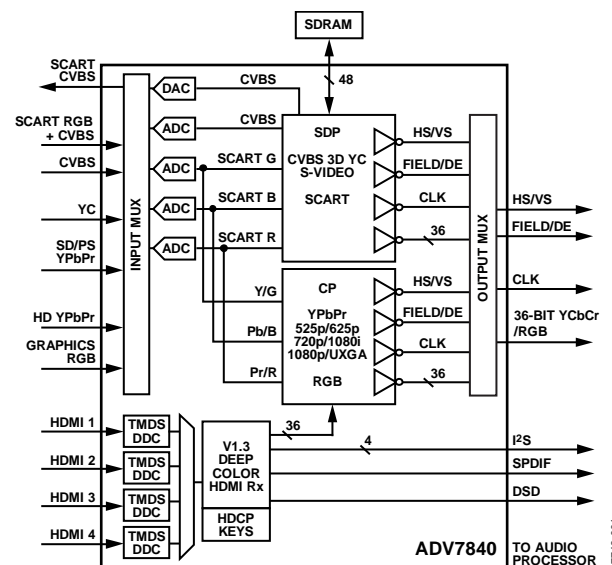


Figure 1.

For more information about the ADV7840, contact Analog Devices, Inc., at [video.products@analog.com](mailto:video.products@analog.com).

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**ADV7840**

## NOTES

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