Video Decoder and Display Processor
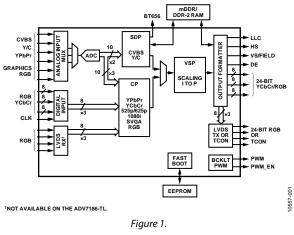
Data Sheet

ADV7186

FEATURES

3D comb video decoder
Overlay support for external graphical HMI/OSD
Fastboot and bitmap load from external EEPROM
LVDS transmitter and receiver (OpenLDI mapping)
Hardware downscaling/upscaling to QVGA and WXGA panel resolutions
Fully differential analog input
LCD controller
Qualified for automotive applications
Video decoder
   NTSC/PAL/SECAM color standards support
   NTSC/PAL 2D/3D motion detecting comb filter
   Advanced time-base correction (TBC) with frame synchronization
   Vertical peaking and horizontal peaking filters
   Any-to-any, 3 × 3 color space conversion (CSC) matrix
Video signal processor
   Edge adaptive interlaced-to-progressive conversion of 525i and 625i
   Bitmap overlay from EEPROM
   Low cost bitmap overlay requiring no external memory
   Hardware downscaling/upscaling to QVGA and WXGA panel resolutions
   Adaptive contrast enhancement (ACE)
   Up-dither of course resolution input signals
   Vertical flip/horizontal mirror orientation control
Analog input
   Single low power 10-bit analog-to-digital converter (ADC)
   6-channel analog input mux
   Single-ended or fully differential input
   3-channel antialiasing filter
   525i-/525p-/625i-/625p-/720p-/1080i-component analog input
   RGB graphics up to 800 × 600 at 60 Hz (SVGA)
Digital input
   Flexible 24-bit pixel input interface
   LVDS receiver (OpenLDI mapping)

Digital output
   Flexible 24-bit pixel output interface
   LVDS transmitter (OpenLDI mapping)
   Independent BT.656 output channel
LCD controller
   Timing controller (TCON) for LCD panels PWM backlight control
   Programmable gamma correction
General
   Dual standard identification (STDI) function support
   1 programmable interrupt request output pin
   Spread spectrum output pixel clock
   Support for low power mobile DDR (LPDDR) and DDR2 SDRAM
   LVDS Rx available on ADV7186BBCZ and ADV7186BBCZ-T only
   LVDS Tx available on ADV7186BBCZ only
   TCON available on ADV7186BBCZ-T and ADV7186BBCZ-TL

APPLICATIONS

Navigation radios and infotainment head units
Central console and rear seat monitors
Parking guide and ADAS vision systems
Pico and mini projectors
Industrial monitors and displays

FUNCTIONAL BLOCK DIAGRAM

¹NOT AVAILABLE ON THE ADV7186-TL.

Figure 1.

For more information about the ADV7186, including the complete data sheet, contact your local Analog Devices, Inc., sales office at www.analog.com/sales.

Technical Support   **www.analog.com**

ADV7186* Product Page Quick Links

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Comparable Parts □

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Documentation □

Application Notes

- AN-1256: Manual Scaling in the ADV7186
- AN-1260: Crystal Design Considerations for Video Decoders, HDMI Receivers, and Transceivers

Data Sheet

- ADV7186: Video Decoder and Display Processor Data Sheet

Design Resources □

- ADV7186 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

Discussions □

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Technical Support □

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NOTES

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